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Producing Comb Honey that Can Be Graded

By E. L. Sechrist, Bureau of Entomology, Washington, D. C.

LEAVING out of this discussion the important item of the actual preparation of colonies for the honeyflow, which belngs to another phase of beekeeping, the production of comb honey that can be graded may be divided into three parts:

1. Preparation of equipment.
2. Using this equipment during the honeyflow.
3. Care of the surplus honey.

Preparation of Equipment

Great losses are sustained by the beekeeping industry because the preparation of equipment is often put off until the time when it is actually needed. This procrastination even extends to the ordering of supplies, which is sometimes delayed until the last moment, frequently resulting in disappointment on account of some unexpected delay. The only safe rule is to prepare, during the winter, every possible item of equipment, so that nothing is left to be done in the spring except putting up sections and filling them with foundation. This, many beekeepers think, is best done as nearly as possible to the time when they are to be used.

To secure best results, standard supers with proper bee spaces must be used, and all new equipment purchased should be for 4¼x4¼x1⅞ two beeway sections.

Supers and sections must be scraped free from propolis, so as to avoid loss of time when filling supers with sections. More propolis will be deposited on sections in dirty supers than if the supers are clean. When separators are cleaned, the good ones can be counted and as many new ones as needed purchased. It does not pay to try to raise comb honey without using separators. Care should be taken not only that separators are clean, but that they are not warped, or bulged, or broken, either of which would result in unevenly built combs.

E. L. SECHRIST.

After a very careful survey of conditions among comb honey producers, which took him to most of the larger beekeepers throughout the United States, Mr. Sechrist gives here a very valuable summary of the most important items in comb honey production.

New, clean, best-grade sections should be used for all honey that goes into the wholesale markets. Those who sell their product on their home markets can profitably use second grade or off-color sections if their customers do not object to them; but for the city market there is no question but that honey stored in brown or buff or streaked sections, or in sections stained with propolis, is more difficult to sell than the same grade of honey in clean, white sections. Every effort, therefore, should be directed toward having all honey going into the wholesale market exhibit as perfect an appearance as possible.

These sections must be filled properly with thin surplus foundation. To produce honey of the finest appearance, full sheets of foundation must be used, and in most cases bottom starters are necessary. It is also necessary that the foundation be placed in the section always in the proper way to insure uniform finish and beauty of the completed comb. This means that always the cut edge of the foundation must be attached to the wood. The rows of cells will then run crosswise of the section, giving the comb a much better appearance than if the rows of cells run vertically. This is of importance, but it is not always done. The difference in appearance may be seen readily by taking two sections of honey of equally good appearance and giving one of them a quarter turn.

To promote the necessary uniformity and beauty of appearance, all sections should be placed in the supers with the dovetailed corner at the bottom.

After sections are filled with foundation they must be wedged or clamped in the supers so as to be perfectly square, because otherwise difficulty will be experienced when packing honey in the shipping cases. Neglecting this point of having all sections square results in many sections being slightly cracked, either when being packed or in shipment. These hairline cracks result in slight

leakage, which disfigures the surface of the comb, soils the section and case, irritates the broker and retailer and lowers the selling price of the honey and the consequent profits to the producer.

No other one thing so hurts the sale of comb honey as broken and leaky combs on the retailers' counters or shelves. Much of this breakage can be prevented by the use of full sheets of foundation and bottom starters and by careful squaring of sections in the supers, both these items being included under preparation of equipment.

The remaining item of preparation is that of paraffining the tops of sections after they are in the super.

Paraffining Tops of Sections

This is an old practice, said to have been originated by Harry R. Warren, of Nevada. While it is largely used in the West, and to a limited extent in the East, it has not come into general use. It is of such great importance, both to the beekeeper and in promoting the good appearance of cases of honey, that it ought to be universally followed. If paraffining is done properly very little propolis will be deposited on the tops of sections, and what is placed there can be scraped off readily, leaving the section practically free from stain. The cost of paraffining is probably less than three-fourths of a cent per case, and the labor saved in scraping sections is worth much more that that. Again, used paraffined sections are practically as good, even though kept over for a season, as when first put up, not becoming dirty and discolored. Those who use bait sections will also find paraffining very valuable.

Only the best paraffin with a high melting point should be used. Paraffin of low grade discolors at a temperature too low to permit good work, and also imparts a greasy look to the top of the section. A pan of hot paraffin, of ascertained temperature, and an ordinary varnish brush, should be provided, and a thin, smooth coat of paraffin applied to the top of the sections after they are in the supers and before they are given to the bees. The brush, when not in use, must be kept continuously in the hot paraffin. Just before applying it to the sections, it is to be wiped off on the edge of the pan to remove the drip, when it is given one sweep, lengthwise, over the tops of four sections. The brush must not be worked back and forth; that will cause air bubbles and make an uneven surface. Supers should be tilted to an angle of 45 degrees and the brush given only one sweep down. This procedure will greatly aid in preventing smears of propolis over the tops of the sections. If the paraffin is at the proper temperature, and the work is well done, enough paraffin will enter the spaces between adjoining sections, almost to prevent the deposition of propolis on the upper edges of the vertical ends of sections.

Using Properly Prepared Equipment

To begin with, a good comb honey location must be selected. It is useless to attempt to produce a fine article of comb honey in a locality having a long, slow, honeyflow, or in one having several short flows separated by intervals of dearth. Neither should comb honey be produced in a locality where propolis is gathered freely, unless all comb honey is removed before the season when much propolis is being collected. Considerable injury to the market results from trying to sell honey having comb and sections stained by propolis. Lower prices are the result. In most markets dark comb honey does not sell well, therefore, the color of the honey produced in any region must be considered when deciding whether to produce comb or extracted honey.

For best results in comb honey production, a locality which produces an abundance of white honey should be selected. Nectar secretion must be rapid, as all activity must be very intense to produce a good quality and quantity of comb honey.

To assure the gathering and storing in the sections of this abundant supply of white nectar, the bee colony must be at its maximum strength, and the bees of the proper age for the work they are to perform. A colony composed of old bees will not do good work in building comb and storing honey, nor can better results be expected of colonies composed entirely of young bees.

Given a colony of bees of the right strength and age, supers must not be put on too early or too late. If put on too early, the sections are likely to become stained or daubed with propolis and the foundation injured before the bees are gathering nectar. If sections are put on too late, swarming and loss of honey will be the consequences.

Obviously, one cannot always put sections on exactly when they are needed. The solution seems to be to have a two-story brood chamber, or one story and a "food chamber." The bees can then begin to store honey in this upper story, or food chamber. When storing has begun, the upper story can be exchanged for two comb honey supers, in which storing should begin immediately. It is a common practice, under the old system of using but one brood chamber, for the beekeeper to wait until white wax begins to show on the top of edges of the brood frames before he puts on sections. This is too late for best results, as such a condition does not exist until the bees are crowded. They are then depositing nectar in the brood chamber, thus crowding the brood and starting swarming conditions. They should have room outside the brood chamber to store this early, fresh nectar, or loss will result. This room is necessary, also, even before the honeyflow begins, in order to provide clustering room for sufficient bees to occupy one or more supers as soon as they are put on. If only one hive body is used, it is impossible for it to contain a colony of bees large enough to do the best work when supers are put on. If all the bees fill only one hive body before supers are put on, it is useless to expect them to fill twice that space at once when supers are added. Now, since sections are not to be put on before the honeyflow, nothing can be done except to provide this additional, necessary room for storing and clustering, by using a second story or half story, on the hive, until the time arrives for putting on sections.

With properly prepared supers, with clean white sections wedged in tight and square, with separators to secure the building of straight combs, with the tops of sections paraffined, and with supers in place at the beginning of the white honeyflow, on only those colonies that are strong enough to occupy the supers fully and at once, rapid work in the sections may be expected and a fine grade of honey should be secured, provided that supering is done to correspond with the honeyflow. Proper supering is so fully described in Farmers' Bulletin 1039, "Commercial Comb Honey Production," that it is unnecessary to restate it here. Adequate supering in connection with proper strength of colony and immediate work in the supers, as already described, will largely prevent swarming, which must also be controlled if good quantity and quality of honey is to be produced. Methods of swarm control are described in Farmers' Bulletin 1198, "Swarm Control."

With properly prepared equipment, used as described, the bee keeper should harvest uniformly filled combs, evenly sealed, with the wood of the sections but little stained with propolis.

Care of the Surplus Honey

All section honey should be removed as soon after filling as possible and before staining of comb and sections has begun. Some have insisted that honey remaining on the

hive a long time is better flavored and ripened, but this is questionable, as the ripening process goes on anywhere, with the proper temperature after the honey has been sealed, even after it has been removed from the hive. Any possible advantage in quality secured by permitting comb honey to remain a long time on the hive is more than offset by deterioration in appearance.

In taking off filled supers and driving the bees out with smoke, it is important to have the smoker always well filled with clean fuel, to prevent ashes or soot from soiling the sections or combs. This is of more importance than is generally supposed, and much fine honey goes into a lower grade when it reaches the market, just because some careless worker has blown soot or ashes over the combs and sometimes into partially sealed cells of honey. The purchaser does not like sections with black specks built into the wax of the cappings, or even black specks on the surface of the comb. He is inclined to think it is dirt, which quite too often is the case.

Clearing filled sections by means of bee escapes is good practice when local conditions are such that their use does not cause the bees to cut open cappings of sealed honey. If the honey is well sealed, out to the wood, or if the bees have removed all unsealed honey in the row next to the wood, so that no unsealed honey remains with which the bees may fill themselves when bee escapes are put on, cutting of cappings is almost certain to follow.

Robber bees must be kept away from filled sections at all times, to prevent damage to the combs. This is necessary while sections are on the hives above bee escapes, as well as after they have been removed from the hives. Care should be taken to see that any holes or cracks between supers or between cover and supers are carefully closed, bee-tight, when escape boards are put on. Then the honey house, or place where honey is kept, must also be made bee-tight. It is frequently the case that a window screen is not sufficient to prevent robbing from a honey house. Most beekeepers have seen, at some time, a cluster of bees on the inside of a screen busy passing honey to bees on the outside of the screen. Comb honey has been cut and spoiled on this account, to the utter mystification of beekeepers who considered their honey houses well screened. Double screens are the remedy for this trouble.

As the filled supers go into the honey house they should be piled up with one or more sheets of newspaper placed between the supers. Any drip from burr combs or leaking sections will then fall on the paper instead of on the sections in the super below. This paper will also keep out ants and dust. If any bees remain on the supers as they are carried in, the supers should be piled up crosswise of each other temporarily until all bees leave, otherwise, cut cappings may result from this cause.

In removing filled sections from supers care must be taken to loosen them in the section holders without twisting. Otherwise many sections will be damaged by slightly cracking the combs. Such hairline cracks may be overlooked when the honey is put into shipping cases, resulting in leaks and loss in transit.

Cleaning propolis from sections of honey requires careful work. By practice and by study to avoid unnecessary motions, considerable speed may be achieved. The special knives devised for this purpose will soon save their cost by reducing the number of damaged combs.

To secure a crop of comb honey which will grade well, the essential requirements are a location in every way adapted to producing comb honey, properly prepared and properly used equipment, and colonies of bees of the necessary age and strength. The honey must be taken from the hive as soon as it is in suitable condition, and must not be damaged either by the beekeeper or by the bees. Such a crop of honey, with sections clean and well graded, will bring good prices if it has not been broken in transit to market.

Breakage in Transit

Comb honey must be well packed in order to reach the ultimate consumer in good condition. To secure the best prices, the surface of the comb must be absolutely dry on arrival at its destination. Utmost care in packing is the most dependable safeguard.

It is useless to expect truckmen and others to handle cases of comb honey with the same care that the beekeeper uses in getting it to his shipping point. Beekeepers might as well make up their minds to meet this condition. No matter how well the beekeeper or shipper packs a car of honey, provided honey is shipped in car lots, it has not reached its final destination at the end of its railway journey. It is removed to the warehouse of a broker, being handled several times by men who do not know how to handle honey, before it reaches the counter of the retailer. Most breakage occurs between the car and the retailer. There is no remedy but to pack the honey at the apiary in such a manner that it will reach the retailer with the comb surface absolutely dry. If it does not do this, it not only must be sold at a loss, but that retailer wants to sell no more comb honey. Thus the beekeeper finds the market dull and the price low. Not until beekeepers pack comb honey so that it will reach the retailer in good condition can they expect a good price and low freight or express rates. The railroads must protect themselves; they will not give low rates if 90 per cent of honey shipments are followed by claims for damage by breakage. If the beekeeper will not pack his honey as carefully as the value of his product demands, he is bound to received low prices and pay high rates on the beautiful honey which he has produced and graded so well.

Although probably no other one thing is so important to the future of the comb honey trade as adequate packing of the finished product, proper packing has not yet been devised. The Bee Culture Laboratory desires to make as soon as possible, tests of various styles of cases and packing in the hope of determining just what is necessary to meet the difficult conditions existing in the shipment of comb honey. This work will be done as soon as funds are available for the purchase of sufficient honey to make the tests which, of necessity, must be rather extensive, and must be carried to the breaking point under uniform conditions, with honey of various grades and with various wooden and cardboard cases.

Novel Feeder

I use a quart Mason jar through the cover of which I have punched about twenty-five holes with a small nail about a size larger than a shingle nail. An ordinary shingle nail hole would probably do just as well, but I used the longer nail for convenience in handling.

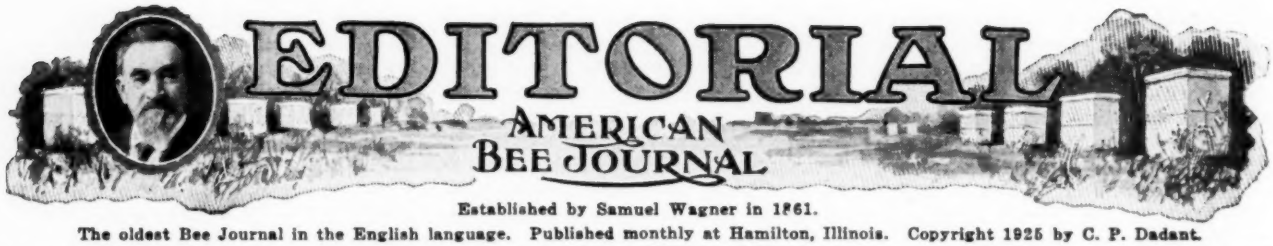
Piling a few frames of comb directly above one another, I fill my Mason jar with syrup and fill comb by vigorously shaking the jar.

One side of a comb holds about a pint, therefore a quart can be shaken into one comb, as the syrup does not run out when comb is inverted.

Feeding by this method is almost too good to be true after going through the various other methods advocated. I use tartaric acid, about one ounce to five gallons of syrup, to prevent sugaring of the syrup.

Any bee man who has feeding to do should give this method a trial, and I hope I may be the means of saving some one a lot of grief.

J. A. Goodall, Idaho.



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The Corn Sugar Bill

So much anxiety has been manifested among the bee men as to the possible effect of the corn sugar bill that the associate editor was sent to Washington to get all possible information and to use what influence the American Bee Journal could offer to prevent injury to the honey-producing industry.

The so-called "Corn Sugar Bill' was first introduced into the senate by Senator Cummins, of Iowa, and received much publicity as a farm relief measure. It was widely commented upon as a means of enlarging the market for the American corn crop. The facts seem to be that little, if any, effect would be felt by the farmer, since corn sugar is already manufactured in large quantity and there is no law to prevent its sale for any use for which it is suited.

The sponsors of the bill stated that the sole intent was to permit the use of corn sugar in sweetening or preserving food products, without labeling, on the same basis as cane or beet sugar is used, and not otherwise. Many beekeepers became alarmed and felt that the passage of the bill would permit the adulteration of honey with corn sugar or corn syrup. Nothing in the bill at any time made any reference to corn syrup, so that product could not be affected in any way. There was some uncertainty as to the possible interpretation of the law as to the uses of corn sugar which might have been possible had it passed as originally drawn.

Our representative conferred with Mr. Campbell, who has charge of regulatory work in the U. S. Department of Agriculture, and also with Secretary of Agriculture Jardine. Both expressed the position of the department as opposed to the bill on the grounds that there should be no exceptions in the pure food law, in favor of any particular product, no matter what it is. They hold, and rightly, according to our view, that every product should be sold on its own merits, that the purchaser should know exactly what he is buying, and that no meritorious product will object to such a provision. In case an exception is made in the provisions of the law as applied to one product, others might with equal reason apply for similar consideration, with the final result that the law would be filled with exceptions of one kind or another.

Chairman Robinson, of Iowa, who heads the subcommittee in the House which has the bill under consideration, assured the writer that the committee has no disposition to weaken the pure food law, and that in case the bill is reported out by the committee it will be so worded as to insure that no possible harm can come to any food product because of it. He stated that it will be so modified as to meet the objections of the Department of Agriculture as well as those of the beekeepers.

It is apparent that the best minds in Washington are engaged in trying to work out some satisfactory solution for the present agricultural situation and that any legislation that seems to offer promise of real relief for the farmer will secure support of the administration.

There is much apprehension that ill-advised legislation might be passed under pressure which will do more harm than good. As far as the corn sugar bill is concerned, all possible angles have been so fully considered that there is nothing for the beekeeper to worry about, for no law is likely to be passed which will permit adulteration of our product. F. C. P.

The Huber Book

My own translation of the Huber work is at present on my desk in book form and I have never felt prouder of anything than I am of this book. Any one who is in possession of one of the four former English editions will easily understand my feelings. Not only do I know that the translation is complete, but the fourteen plates in the original Swiss book are reproduced in every detail. The printer and binder have done their work thoroughly. I trust the reader will pardon me for bringing this into the editorials, for it is not a matter of profit, even if we sell every copy printed.

No one can judge of the great influence of Huber's discoveries upon modern beekeeping until he knows with what care he made and repeated his experiments. The ridicule heaped upon him, at the time, by such men as Huisch, who called his discoveries absurd, was fully contradicted by men like Langstroth, who called Huber "the prince of apiarists."

But we must not ascribe to Huber discoveries he did not achieve. A contemporary magazine, recently published a contribution by the late N. P. Kunnen, of Luxembourg, in which he denies that Dzierzon was the discoverer of parthenogenesis and credits it to Aristotle, Janscha and Huber. This is erroneous. Huber, in his fifth letter, page 47 of my translation, after giving evidence that some worker bees can lay eggs, asked this question, for which he found no answer: "But why do these bees lay eggs of males only?"

Again, page 31, in his third letter, he wrote of a queen whose fecundation he had caused to be delayed until the 20th day after birth, which laid only drone eggs, and added: "I do not aspire to the honor of explaining this strange fact."

All through his book, Huber shows wonder at this laying of drone eggs, by workers, or by queens that were impregnated too late in life, but nowhere does he explain the reason of it. He had evidently never found the explanation which Dzierzon made so evident. It often caused me to wish that the two men might have lived at the same time and worked together on these problems.

The American Beekeepers' League

I have started writing a short history of the American Association, at the request of Mr. B. F. Kindig. It will appear in the American Bee Journal, commencing with July. It will be short enough not to be monotonous.

Eight differennt names were adopted, at different times. Here they are: North American Beekeepers Association, International American Bee Association, North American Beekeepers' Society, United States Beekeepers' Union, National Beekeepers' Union, National Beekeepers' Association, American Honey Producers' Association, American Honey Producers' League.

Much good was done, but much more could have been done, had there been more "union" among the leaders.

What states furnished the greatest number of officers in the American Association and how many officers and members of the Executive Committee were there in the entire 57 years since its first organization?

The officers furnished by the different states num-

bered as follows: Michigan, 18; New York, 16; Illinois, 13; Indiana, 10; Colorado, Ohio, Iowa and Wisconsin, 8 each; Texas, 7; Ontario, Kentucky, Missouri, Pennsylvania, 5 each; Minnesota and Tennessee, 4 each; California, District of Columbia, Delaware, Kansas, Massachusetts, Montana, Nebraska, New Jersey, South Dakota, Utah, Vermont, 2 each; the remainder of the states and the Province of Quebec, 1 each; in all 130, or thereabout. A few names are left out because the state of the officer could not be ascertained.

We judge that a list of the names here would be irksome; they were nearly all well known leaders in beekeeping. We propose to give the names in the short history to be published.

Let's Stress Honey as a Food and Stop So Much Talk About Disease

We like the "Gleanings" editorial in April about the harm of so much publicity relative to diseases among bees. Why fill the press with "disease?" Isn't it enough to keep it "home?" Might as well tell the housewife that the honey is diseased. She will read that between the lines and quit buying honey.

Geo. H. Rea, writing as Extension Specialist in Beekeeping for the Pennsylvania State College, says: "Along with our educational work in beekeeping here, we are giving all the publicity possible to the importance of honey as a food. You may have heard my talk on the radio from Station KDKA a few nights ago. I will give three more talks during the summer on beekeeping subjects and each time will aim to make an appeal for honey as a food."

Our readers will remember an item in the Journal about a radio talk, given by Dr. A. C. Baxter from the Davenport station. I have just seen Baxter again and he says that in the time since that talk he has received between 800 and 1,000 letters inquiring about bees and honey. There were over 250 telegrams at the time of the talk.

Wasn't this better than talking about disease? Doesn't it show that people are quick to appreciate a good thing when they know about it? Let's talk honey, not disease.

Sterilization of Foulbrood Combs

Here is a most useful bulletin, on a subject which interests all beekeepers. It is a Department circular, No. 284, by Dr. Sturtevant, of the Bee Culture Laboratory, on tests made of solutions to sterilize combs containing American foulbrood. It should be in the hands of every beekeeper who aims to treat combs. Write for it to the Office of Publication of the Department of Agriculture.

Dr. Sturtevant makes it clear that it is a poor policy to try to sterilize combs that have sealed cells and honey. So he recommends to uncap all cells and extract whatever honey may be in the combs. It would take too long to describe his experiments. Get the circular and read it carefully. Dr. Sturtevant has done a worth while thing in making these experiments and reporting upon them. The circular contains 26 pages.

Cramps From Eating Honey

Some people cannot eat honey without suffering from stomach cramps. Usually it comes from eating too much of it at a time, especially when it is honey containing considerable acidity. But we are told by Mrs. Karr, a lady who works in our mailing department, and who suffered from cramps after eating honey, that she avoided cramps and digested the honey nicely, if she ate it with bread and butter or if she put a certain quantity of salt mixed with the honey. It is worth trying.

As a rule, those who cannot eat honey without cramps will succeed in digesting it and will be better able to eat it safely, if they begin with a very small quantity at first and eat it regularly.

Corn Sugar

If there was not so much money in making corn sugar out of corn, there would not be such keen attempts at palming it on the consumer for good sugar. Until lately corn sugar had about one-third of the sweetening value of ordinary sugar. Now, it is claimed to be more than half as sweet, but they want to pass it for as good sugar as cane or beet sugar. Unlike cane or beet sugar, it is not produced by evaporating the water out of a sweet liquid, but by chemical action on the starch of the corn. A great argument is raised with the farmers to convince them that it is going to raise the price of corn. Its effect in that direction will not be comparable to what would happen if Europe could only sell us enough of their products to buy food from us. But we are taking good care to prevent that by high tariffs, and that is why there is so much starvation in Europe and the East, while we have too much cereal food to secure good prices. We cannot consume all we produce, and the increase of corn sugar will be like a drop in the bucket in corn prices. We trust they may not succeed in hiding corn sugar behind the other sugars in order to sell more of it, for it is positively inferior and everybody knows that.

Bibliography—Keep Bees

"Gardez des Abeilles," that is the title of a new textbook of 112 pages published in Quebec, by C. Vaillancourt, the man in charge of beekeeping at the Ministry of Agriculture of the Province, who made his name so well known by his active management of the International Congress of 1914. Mr. Vaillancourt advises the keeping of bees for the fertilization of blossoms in orchards and fields and to secure in each farm home a delicious dessert costing nothing but the labor of caring for a few hives of bees. The textbook is well illustrated, well gotten up, and may be secured at the Ministry of Agriculture of the Province of Quebec.

Demareeing. Demarrying

A good joke on one of our famous American methods, the "Demaree" method of swarm prevention, is given in "Bee Craft," page 64. Here it is:

"A beekeeping friend, who lacks the gift of tongues, once described a method of swarm prevention in which he juggled with brood-boxes, supers and excluders till he lost all sense of time and space, from sheer giddiness. He called the process **de-marrying.** Now wh-wh-what do you th-th-think of that?? he demanded in triumph, at the close of his dissertation. Think that it would be cheaper to let them marry? So it would! "

Transferring Bees

This is the proper time of the year to transfer bees from box hives or from cooked combs into straight frames. Fruit bloom usually comes at the time when the hives are the lightest. I wish to make only one recommendation: Do not alloy of any robbing. Do not expose any combs outside. One of our contemporaries lately showed pictures of transferring combs apparently in the open, in the apiary. Don't do that; by all means do the transferring inside of a building and do not bring any leaking honey back to the apiary. Robbing is the greatest curse in transferring bees.

Birthday Notes

Reader, on page 178 of the April number, a dark conspiracy succeeded in inserting some personal matters concerning "the Chief" and unknown to him. The bright smiles and shining eyes of the plotters, when this **April fool** feature was revealed to me, showed that they are neither sorry nor repentant. Nothing that I can do now will mend matters, not even a protest that I don't deserve the credit given me for activity. So I am going to try to forget the incident and hope you may forget it also.

How I Learned to Not Keep Bees

By Max Welton.

In looking over the old American Bee Journals, I see where many give their experiences in learning how to keep bees, while a few tell how they learned to make the bees keep them. For the sake of variety, and with the editor as an accomplice, I should like to tell something of how I learned to **not** keep bees.

My grandfather's bees were at the end of the garden. There, as a boy, I proved that I was not afraid of hard work; for those bees were as busy as—did you ever see a kitten with two tails? Perhaps not; anyway those bees were hard workers and I used to lie under the Oxeye apple trees and bravely watch them for hours—how they would drag in the pollen, and what perfume was wafted to me from the hive! My grandfather had the old Langstroth hives—the latest thing out in his day. The super honey boxes would hold four or five pounds, were square and had glass fronts. The three-cornered entrance blocks had cunning little tunnels on the under side where the beemoth could make herself at home on chilly nights and watch a chance to dodge into the hive.

But Tempus Fugit

My father fell heir to most of my grandfather's apiary and we parked it out under the sweet cherry trees which never bore any cherries. In the early summer, just when the white clover was in full bloom, and "the white hand of Moses on the bough puts out," there was always something doing among our bees; they were very recherche, moving in the highest circles, but with the aid of pans, dinner bells, cow bells, sand and water, we could usually bring them down to earth and get their feet on the ground of a new hive. Yes, brothers, it was a strenuous life, but a pleasant time was had by all except, possibly, the bees. So I became infected with "beeitis," or whatever you are a mind to call it. By the time my temperature had reached fever heat, I had procured a copy of the A B C, which Novice had published only a few years before, and I was soon lost in the sunlit fields and flowering upland pastures of that entrancing book; even the printer's ink and the varnish on the binding smelled good to me.

Doers and Tellers

We read that the world is made up of doers and tellers; that seldom is the ability to write, and the executive ability combined in one personality. Thus, to mix a quotation, many a mute, inglorious Milton of the bee world is doomed to blush unseen, but with this compensation, his sweetness is not wasted on the desert air. But Novice was not one of those modest violets that bloom up at the head of the canyon—no, he had a positive genius for doing, and to be a better teller, one would need to come from Way up the Creek. So hand in hand, as it were, we wandered through the happy hunting grounds of speculative beekeeping, "and many a knot unravelled by the road." From the flowering meads of "Absconding Swarms" our journey extended just to the sere and yellow leaf of "Wintering."

Growing Pains

About this time I began to feel the need of more and better appliances; among other things I wanted some Italian bees, comb foundation, section boxes, smoker, etc. Hearing of some bees to be offered at a sale, I procured two chaff hives of Root's manufacture filled with alleged Italians. I am inclined to think, however, that the seller was unduly optimistic as to their ancestry. I feel pretty sure that there was a bar sinister on their 'scutcheon, for when I peeled the oilcloth back to look at them, I immediately met the advance guard of their offensive with Shock Troops boiling up behind. By quick foot work, right-hand swings and left upper cuts, I was able to stand them off until I fell behind the lilac bushes, where I was comparatively safe. Determining to do or die, I stoked up the Clark's cold-blast smoker and advanced again; this time I was victorious and when I left them they were busy carrying in the wounded and carrying out the gassed for fresh air.

The Essentials

Having mastered the bees, I fitted them up with sections, starters, separators and everything I thought necessary, saying: "Now, bees, show your speed." I sat back and awaited the harvest that I felt would surely follow. Strange to say, the bees did not seem to appreciate my efforts and instead of honey, I still got swarms —they utterly refused to use those nice, white, basswood section boxes. What to do? The trinity of beekeeping essentials had, of course, entirely escaped me. If they were in the A B C, and I suppose they were, I had completely overlooked them. I refer to the need of young queens, strong colonies at harvest and ventilation; also, I had no supply of drawn combs. I think it would be well if all writers about bees should keep referring back to the essentials so that the beginner might keep them always in mind.

Wanderlust

About this time I left the bees, to learn the carpenter trade. Hearing the call of the West I landed in California in the spring of '92. Shortly afterward Professor T. S. C. Lowe promoted the incline railway up Mt. Lowe, via Rubio Canon and Echo Mountain. I helped erect the buildings, hotels, chaplet, observatory, etc. No one who visits Southern California should miss the trip over this scenic road. The views are entrancing—the land of romance.

One Sunday morning at the Universalist church in Pasadena, there appeared on the rostrum, after service, a long-haired man from Boston. I wish I knew his name. Perhaps some reader can supply it—1892-93. He carried a violin under his arm, an Amati, he said, made in 1630. He began to play. His audience was carried away far beyond the tides of time and place. Nothing spectacular or tricky! no stunts, but elate harmonies of singing birds mixed with deep-toned organ pealings, throbbing, appealing, smooth and twittering. When through, the wings of music folded up with that small resonant box and were laid away in the case. For an appreciable time the audience sat spell-bound, then arose and filed reverently out—no applause. And so another hobby was discovered —I became a devotee of the violin.

At one place on the trail to Rubio Canon, the bees were boiling out of a rocky cliff in which they had made their nest. That was the closest I came to the bees while there. I claim to be the only living bee fan who ever visited California and returned without messing around more or less with bees.

Twenty Years After

Back at the old home from my wanderings, I went to see the bees. Many of my friends and associates had passed away, but the good old chaff hives were still there, full of bees and, as I found, full of honey. I took a screwdriver and started to wake them from their Rip Van Winkle sleep. I went back and got a cold chisel and hammer. With these I managed to "extract" my honey, of which there was a washtub full. (I never use any vessel smaller than a washtub for measuring honey.) At last my day of harvest had arrived, but the chaff hives could not stand the strain of prying out the twenty-year accumulation of propolis; they went decidedly defunct, and I was obliged to transfer the bees.

About this time I became a reader of the American Bee Journal. How I ever came to desert Novice, my first love, would be hard to say, but there is something about the name Dadant which is very intriguing (that last word is one I despise and hoped not to have to use it; I know it does not mean anything, but we become slaves to custom). But don't you think there is something rather dashing about the name when pronounced Da-dant, with accent on each syllable? Something suggestive of high emprise?

Malady Returns

I took up my wanderings again, becoming in turn telegraph operator, war worker and violin maker, but everywhere I went I dragged trailing visions of what might have been had I got started off on the right foot when keeping bees. At the same

time I was a diligent student of the American Bee Journal and other literature about the subject. Whenever I read in the Journal about foulbrood and the various other things that afflict the bee master, I would think. "Well, maybe you had a lucky escape after all." But even today if I happen to put my fingers into hot glue or drop a flat-iron on my toe, I have twinges of the same old malady which I know is not dead but only sleeping.

I have told how Novice and I missed the essentials, or at least I did; but there is one more very important consideration. Allow me to quote from Mr. F. Greiner, page 237, American Bee Journal for July, 1920:

"The third mistake a beekeeper can make which almost soured my whole nature, is to be content to carry on beekeeping in a poor honey location. My young friend, get out! There are many unoccupied fields; find one and stock up to its full capacity. You will be better off financially."

This advice is, in my opinion, golden. In one of the American Bee Journals I found a map where the honey resources of Indiana had been charted. In the lower central part of the state had been drawn a circle to indicate the poorest place for commercial beekeeping. To draw this circle, the author must have placed the stationary leg of his compass right in the middle of my apiary! So I had failed to unravel the master knot of all.

Bees and Fixtures for Taxation Purposes

By E. G. Carr.

SO far as I have been able to learn, bees and fixtures are not taxed in the several states with any great degree of regularity or uniformity. While I am not advocating a property tax on bees and fixtures, it is highly improbable, in view of the activity in hunting up every source of revenue from taxation, that they will always be overlooked.

It might be of interest, as well as a decided benefit, if some fair, uniform schedule of values could be agreed upon so that those who are fortunate enough, or unfortunate, whichever view is taken, to pay income tax, may have some uniform basis of values for inventory purposes. It might also be of benefit to have such a standard for taxation purposes where such taxes are assessed.

After approaching the problem from various angles, a friend and I have made up these figures for inventory purposes, all on the basis of ten-frame equipment: Empty brood body, 70 cents; Excelsior cover, 60 cents; telescoping cover, 70 cents; inner cover, 30 cents; excluder, 50 cents; bottom board, 40 cents; L size comb, 15 cents; Jumbo comb, 20 cents; shallow comb, 10 cents; frames set up or in the flat, 5 cents; frames with foundation, 15 cents; bees and stores, $1.50.

With this set of figures it is possible to make an inventory of all equipment exclusive of tools, whether in the yard or in the shop.

These figures are not given as being absolutely perfect. It is hoped that beekeepers will criticise and make such suggestions as their experience would indicate as being desirable. In this way we should eventually be able to work out a fair schedule which will be helpful in cases where an excessive valuation might be assessed.

(This matter of rate at which bees and beehives should be taxed will perhaps raise an excited discussion among our readers. Until a few years ago, assessors in this vicinity refused to assess bees at all. But as we own only bees and property connected with bees and beekeeping, it was evident that not all could be considered as bees. However, colonies of bees are very liberally valued at a dollar or less, under the consideration that chickens are rarely taxed as property. We believe Mr. Carr's valuation will be regarded as altogether too high, even by assessors. But it would be a mistake to try to keep bees from being assessed, for they need the protection of the law just as much as any other property.

Blanket valuations should hardly be placed on all colonies of bees. As a business proposition original value of the colony, replacement value and depreciation should be prime factors in determining such value. —Editor.)

Where the Crowd Goes

I have just returned from the New York poultry show, January 6 to 10, where thousands of people passed during this time. Would it not be a good thing for the bee magazines to advise beekeepers, dealers and manufacturers of supplies as well as those selling honey to make displays at such places? It would be a good means of advertising honey. We need more demand for honey, not more beekeepers. All the poultry shows in all the cities would be good advertising mediums for beekeepers if they would bring in their exhibits.

Wm. P. Fritz, New Jersey.

A Bee Sting Cure

By P. C. Kaylor.

I had a sore on my lip just under the right nostril that failed to respond to treatment.

I tried different salves that made no perceptible change; I then went to a doctor, who treated it with the X-ray and electric spark for more than a year with little change for the better. I felt somewhat discouraged and so informed the doctor. He said that I had better go to Baltimore, Maryland, or Charlotteville, Virginia, and take radium treatment, but while debating in my own mind just what to do, the February, 1925, number of the American Bee Journal came to hand. I read the article on page 58, and, three or four days afterwards, it being warm enough for the bees to fly, I caught four, had my wife hold the mirror, and I put the four stings in the sore. The next day, it still being warm, I caught five more bees and did the same thing. Then it turned cold and I was unable to secure bees for several days, but as the weather permitted I used the stings, only two or three, until along the latter part of March, when I put one or two in every day. I continued to use the stings up to the latter part of August, when I stopped, having made a complete cure with 222 stings.

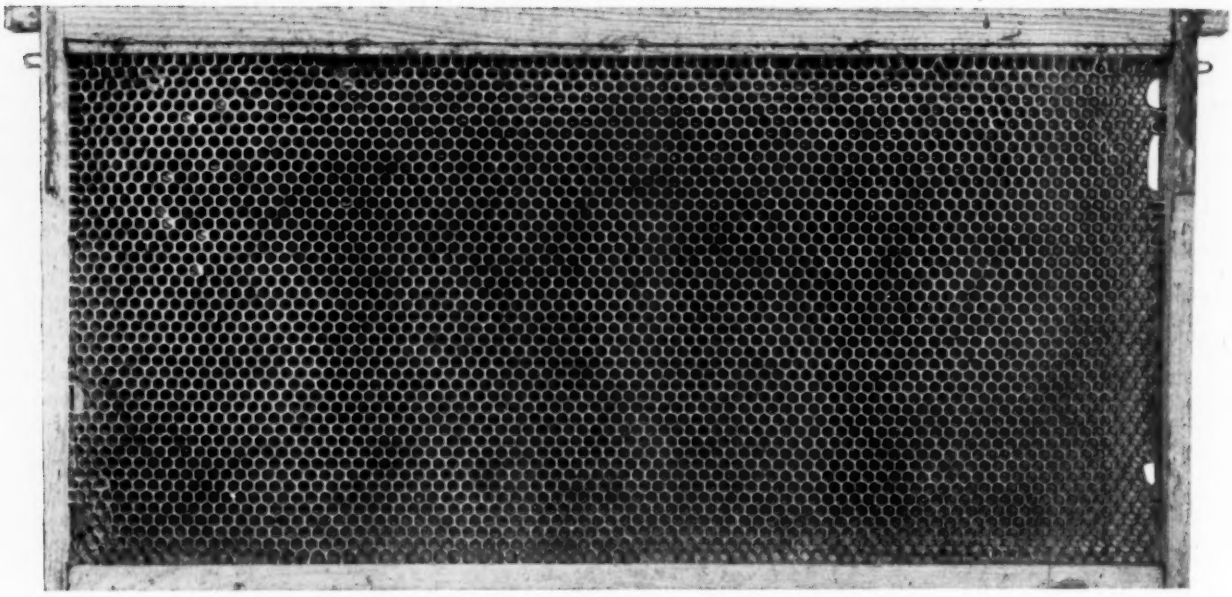
I feel that you ought to republish the whole Lautal article this coming year, as it may be the means of doing someone else a great favor.

(This is a very fine testimony to the value of the Lautal treatment, for lupus, eczema and other affections of the skin, as given by Mr. Ernest Lautal in the February, 1925, number of our Journal. We would be glad to reproduce it if we did not have so much new material. It occupies almost three entire pages. This is another instance of the advisability of keeping a file of our old magazines.—Editor.)

Beekeeping In Star Valley

One of the new industries of Star Valley, Wyoming, is the honeybee industry. State Entomologist C. L. Corkins, of Laramie, says that the developing of this industry will mean an increased income of $50,000 to $100,000 to Star Valley residents.

Dr. George W. West and County Agent Archie D. Egbert have been carrying on experiments with bees the past two seasons and have demonstrated that Star Valley furnishes enough honey-giving blossoms to supply the crop. County Agent Egbert has just completed an ordering canvass of the valley and many bees will be shipped in this spring.



No amount of care is too costly if it results in combs like this.

The Behavior of Bees in Comb Building

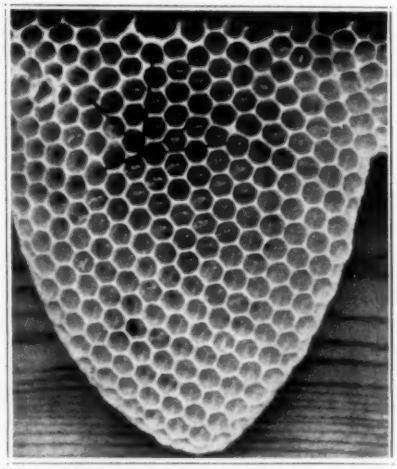
By H. C. Dadant.

IF the work that bees do in building combs may be termed a man's sized job, then the part the beekeeper plays in getting a desirable comb may be termed a bee's sized job. For what the bees lack in their behavior to fulfill the requirements of successful comb building and honey production the beekeeper must supply. Their behavior follows a course of circumstances and animal nature with which we should become familiar. It is a case of team work in which the beekeeper holds the reins to suit the behavior of bees. To make the best of the behavior of bees in comb building, much depends on the behavior of the beekeeper.

While thinking of behavior, picture in your mind the little boy who is just learning to put his words together, making sentences. His father is about to depart for a few days' absence and admonishes him to be a good boy and behave while he is gone. The boy watches his father gather a few personal things into the traveling bag, meanwhile pondering over what his father meant. Finally he exclaims, "Daddy, how can I be a boy and behave?"

It may be difficult for us to see how a bee can be a bee and behave. Nevertheless, their behavior is something we must learn. The thoughts uppermost in the mind of most beginners are of the defensive end of the bees and of getting honey from them. Their behavior in building up the colony and the combs and in gathering the honey crop is often lost sight of.

Let us consider their behavior during wax secretion in relation to honey consumption, building cells, building the complete combs, working in brood nest, working in supers, working with and without comb foundation and also on previously drawn combs, working during comb and extracted honey production and the building of worker and drone cells.



Naturally built comb, showing defective cells

Nectar gathering is followed by honey consumption and wax secretion. The field bee leaves the hive, gathers the nectar, stores it, with the aid of the house bees, where it later becomes food or is transformed into beeswax. Beeswax is readily produced when a good supply of food is being stored. A short or irregular honeyflow means little honey used for wax, while a heavy honeyflow means an abundance of it. If you open the hive at the beginning of a prosperous crop, the prosperity is readily recognized by the new wax or whitening of the combs. An abundant crop manifests itself in much whitening or new wax. Thus examination inside the colony is the only sure method of determining what the fields are yielding. The bees respond to the supply of incoming food in the quantity of comb building, and they respond as readily to a cessation of the honeyflow or of feeding by abruptly reducing the supply of new wax.

The honeybee builds cells in the form of a hexagon-shaped tube made up of three rhomboid bases which form a pyramid, and six side walls, each of which forms a proportionate part of another cell. Each rhomb forms a third of the base of the cell on the opposite side of the comb, while each wall forms a wall of another cell, on the same side of the comb. It is a very unique construction and causes one to marvel at work so well done.

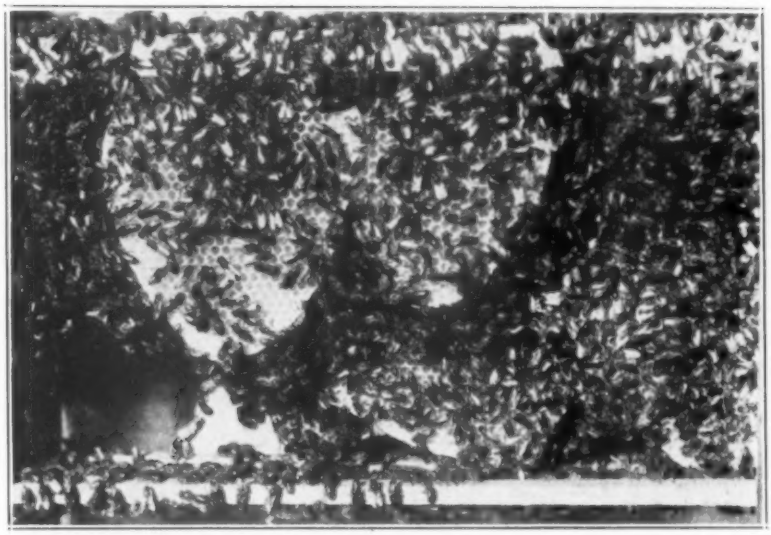
A few days ago, I was gazing into a kettle of wax and was amused to find that the bubbles of foam on part of the surface were arranged in remarkably regular form. As the beeswax boiled, round bubbles came chasing over to a group already located and, being compressed, were forced into hexagon outlines. So some of the reasons for the hexagon seem to be contraction, economy and pressure.

Whatever the order of things, we find our busy insects forming a cell by making one of the rhomb bases on which are started two walls. This is followed by the second base and two more walls, further finished by the third base and the last two walls. The thickness of the walls in natural comb is 2-1000 to 3-1000 and of the bases 3-1000 to 4-1000 of an inch, drone cells being about 2-1000 heavier, to give sufficient strength to the larger construction. There being apparently no previous record of such measurements, I altered a micrometer to suit the purpose and by taking measurements out-of-doors in winter, where wax kept hard and the instrument cold, accurate results were obtained.

We can form a good idea of these dimensions by comparing with the thickness of fine tissue paper, which is 1-1000 to 2-1000. The thickness of comb foundation compared to naturally built combs is about three times greater in surplus to seven or eight times in brood grades, but it does not appear so on account of the transparency of foundation, as compared to the opaqueness of new comb produced in nature, or comb foundation worked over by bees.

The thickness of the cell structure increases very slowly with time, even though many successions of brood occur. Cocoons were carefully removed and found to be two or three ten-thousandths thick. After years of use in the brood nest, walls and bases increase in thickness about one or two thousandths, and it is likely that parts of cocoons are sometimes removed by bees. It is possible to do so by hand, although they are extremely fragile.

Cells vary quite a little in size and shape, in nature, and it is difficult to find many inches of regularly built



As the bees build, without guide or pattern, their free hanging clusters draw beautiful fingers of white, virgin comb.

combs. A right angle cross section of two bases averages about 120 degrees and was recorded by Huber, who found others had preceded him in this determination. There is a frequent variation of three to five degrees, above and below this.

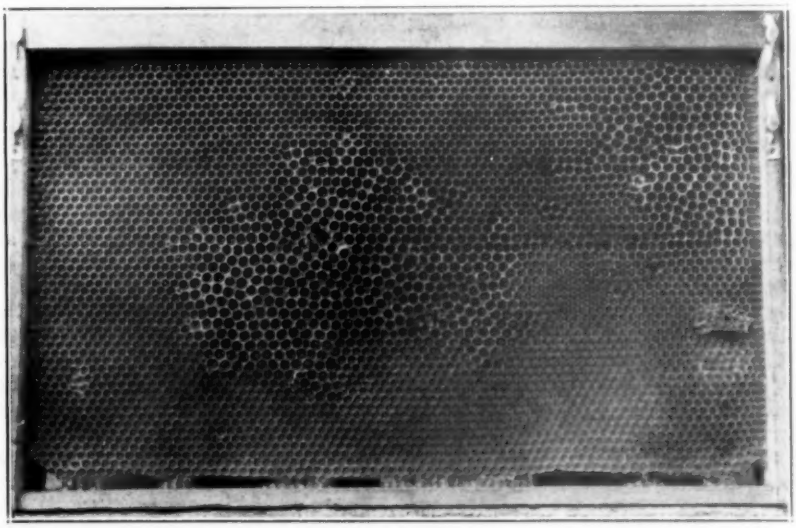
We may conclude that bees are not mathematicians, but because of their natural instinct of preservation and protection, their home and stores are built in the most compact form. The problem of figuring the two angles of the rhomboid bases and other details of the cells is a nice problem in trigonometry, proving that a small percentage, about 0.9 of one per cent of wax, is saved by this particular construction over flat-bottom cells with side walls complete on both sides. The greatest advantage is no doubt realized in compactness and strength.

As a matter of fact, the 120-degree bases are larger than flatter ones, and as all are made several times thicker in foundation than in nature, the bees have more wax to thin down and move. The walls, however, are shorter when finished, and in the case of surplus foundation a very small amount of wax can be manufactured there with the 120-degree angle. Since foundation stretches some, when rolled out of mills, and is so much heavier than bees build, they complete combs from several kinds with apparent equal rapidity.

In building combs from foundation, the bees have much more to do than we can surmise. In fact, most brood foundation is made with cell bases averaging about 20-1000 thick, this being worked over and reduced to an average of about 7- or 8-1000, which is 100 per cent heavier than natural comb. Much was said, a number of years ago, regarding the making of foundation with a base as thin as the bees build, but this has been found entirely impractical and not necessary. A base 6-1000 thick in a sheet of surplus foundation is quite fragile, and it is usually made 8-1000 to 12-1000.

Thin surplus in sections, when drawn out, averages 5-1000, which is about 50 per cent heavier than naturally built comb. The side walls, however, are always found to be very thin, 2-1000 to 3-1000, either when built with or without foundation.

Since bees work over the comb foundation and greatly thin down the base and walls, the resulting cells are about the same, regardless of the kind or grade of foundation furnished, so long as it is not sagged or broken down. The only times that bees do not thin bases in foundation is when the honeyflow is heavy and the house bees have not had suffi-



Drone comb, built on foundation by a queenless colony. This sometimes happens, often on one side only.

cient time to complete the work or when there is a lack of house bees and heat. In this case, which is the exception, cells may be worked over at another time. A heavy medium brood grade seems to be quite advantageous, as there is enough wax in the bases and side walls for the bees to produce at least half the depth of the completed combs, which saves them time and honey in secreting wax. Some beekeepers hold to the view that a light brood foundation is most economical on account of the saving in the first cost. If the beekeeper waits until the bees become crowded for super room and wax secretion has started along with nectar gathering, then it is apparent that the bees will build up light brood foundation as readily as they will medium brood, because they have started secreting wax heavily. Wax secretion and, therefore, honey consumption, is saved when the heavier grades of foundation are furnished at the right time.

[To be continued]

Composition and Changes in Nectar

By Alin Caillas.

NECTAR, as every beekeeper knows, is the secretion of particular glands called **nectaries**, which exist in the corolla of nearly every flower.

Those glands, very small and, as it were, microscopic, are more or less numerous. They do not always secrete a liquid; it is necessary, in order that this secretion may take place, that outside conditions be favorable, and, above all, temperature and moisture. That is the reason why some plants which are reported as honey-producing in some regions (that is to say they produce nectar abundantly) are considered as non-melliferous in other regions, where the conditions I have just briefly enumerated are not realized together.

Nectar is a sweet liquid whose composition varies according to the plants and flowers which produce it, but always characterized by an important amount of sugars. To our knowledge no exhaustive study has yet been made of the nectar of flowers. This is easily understood when we remember that every flower visited by the bees, generally a very small flower, secretes nectar in infinitesimal quantities. One must needs to be a bee to perceive the presence of those minute drops of sweet dew, and one must possess their slender tongues to be able to gather the precious liquid.

It may be stated that the average production of a flower is not over one or two milligrams (1), an almost invisible drop.

It is therefore extremely difficult to study nectar, on account of the small amount of material obtainable. As I was, however, very desirous to undertake the work, I found Senor Jose Chocomeli, one of the greatest and most enthusiastic Spanish beekeepers, a staunch and precious help.

This gentleman owns, at Carcagente and in the neighborhood of that city, beautiful orange groves which extend as far as the eye can see, in which he gathers in April an amber-colored and delicious honey. Thanks to his kindness as well as to his intelligence and technical knowledge, he took upon himself the work of collecting during several days, by means of slender glass tubes, from the bottom of the sweet-smelling orange blossoms, the precious nectar. Senor Chocomeli was helped in his poetical labors by a swarm of girls who played at being bees gathering honey. He was thus able to send me more than fifty cubic centimeters of orange blossom nectar, absolutely pure, and with a delicate and pungent aroma. This quantity was quite sufficient to allow the chemist to undertake a study serious enough to enable him to reach an interesting conclusion.

In all the works about apiculture in which a chapter is devoted to nectar, we may read that nectar is composed of saccharose (cane sugar) and that the said cane sugar is later transformed by the bee in her honey sac into inverted sugar (glucose and levulose).

On the contrary the experiments which I undertook seem to go against the above opinion, which would be only partly true, at least as far as orange blossom honey is concerned. I have treated five cubic centimeters of nectar which have been submitted to a saccharimetric analysis by means of Fehling's reagent.

I found the following results: Reducing sugars (glucose and levulose), 0 gr. 8820, or per cubic centimeter, 0 gr. 1764.

Saccharose (cane sugar), 0, gr. 08217 per c. c.

Dexterine, 0, g. 00715 per c. c.

The per cent composition of nectar is therefore as follows:

Reducing sugars	17,640
Saccharose	8,217
Dextrines	0,715
Undetermined and losses	0,628

In order to have the counterpart of the above analysis, it was necessary to obtain the dry extract.

Twenty cubic centimeters of nectar were placed in a glass test and kept in an oven at 50 degrees F. during three days.

The dry extract found in the test amounts to 5gr.455, that is, 27gr. 275 for 100 c. c. of nectar (72,097 per cent of water).

If we examine the above figures and compare them to the average composition of honey, we remark that nectar contains about 72 per cent of water, while honey contains only about 24 or 25 per cent—that is to say, three times less.

Before going further I must call the reader's attention to the fact that the conclusion that we can already draw from the above analysis is contrary to everything admitted until now.

According to most authorities, nectar should not contain any reducing sugars, and the inversion of the saccharose of which the nectar was exclusively composed should be the work of the bee, who alone could accomplish it.

We see on the contrary, when we examine the sample mentioned in this paper, that the orange blossom nectar contains a very important quantity of reducing sugars, about 18 per cent, while it contains only 8 per cent of saccharose, a little less than one-half.

The part played by the bee in the inversion of those sugars, the part of a regular chemist, is very much less than was thought before. The bees in that case would only act in making the inversion complete owing to the invertase secreted by the special glands of her honey sac.

We can determine the importance of her action in the following way:

If we evaporate the nectar so that it may reach the same concentration as ripe honey, we shall find the following composition (the nectar was evaporated at 50 degrees F. by means of a vacuum pump):

Reducing sugars	52, 90
Saccharose	24, 60

Orange-blossom honey contains, according to our analysis:

Reducing sugars	68, 70
Saccharose	6, 30

The chemical action of the bee bears upon 24, 60—6, 30 equals 18, 30 of saccharose, which, when transformed by the diastase, will leave 16 gr. 47 of reducing sugars.

This last figure is within less than 1 gr. (exactly 0,67) the same as that which results from the analysis of the honey and the nectar from which it is made. Indeed 52 gr, 90 of reducing sugars (nectar) added to 16 gr, 47 are 69 gr, 37 of reducing sugars, and we find 68 gr, 70 of those sugars in the honey analyzed.

I hope that my readers understand how interesting this examina-

tion is, allowing us to see, together with what we already know:

1. That honey gathered and transformed by the bee corresponds to the nectar from which it comes.

2. That nectar contains a high proportion of reducing sugars, contrary to the universally received opinion. The bee transforms only one-fourth of the sugar contained in the nectar (this one-fourth representing one part of saccharose):

3. That there always remains a small quantity of uninverted saccharose, even in the presence of invertase in an active state, the action of the invertase being hindered by the high concentration of the medium in which it must act.

4. That the newer a honey is, that is to say the less time that has elapsed since its being gathered, the more saccharose it contains. This comes from the continuous action of the invertase, which acts very slowly as the concentration becomes higher and the amount of saccharose to be inverted becomes less.

Lastly, another proof that nectar contains reducing sugars is that it begins to ferment of itself. Now saccharose, in order to be transformed into alcohol and carbolic acid, must itself be transformed into glucose, which inversion can take place only through a ferment, an acid, or a diastase. It is quite possible, moreover, that the inversion may begin in the flower itself where there is an abundance of microscopic spores of mushrooms and even of some yeasts brought by the wind.

This study would not be complete if I did not mention in the examined nectar the presence of mineral matters which are one of the most important features of pure bee's honey. It is self-evident that these mineral matters (phosphate of lime and iron, carbonate of iron, etc.,) can but come from the nectar, which itself is the result of a transformation of the plant sap.

I found in the organge-blossom honey of Senor Chocomeli 0 gr. 970 of mineral matters in 100 gr.

Their composition is as follows:

Phosphate of iron	0.251
Phosphate of lime	0.535
Carbonates and sulphates	0.184
Total	0.970

The nectar examined in the same conditions has given the following results:

Mineral composition.

Phosphate of iron	0.084
Phosphate of lime	0.179
Carbonates and sulfates	0.062
Total	0.325

If we compare the above figures we may ascertain that their correlativeness is perfect. The mineral matters of the nectar are all found in the honey, and this was interesting to know and to ascertain. They go through the honey sac of the bee without undergoing any change.

I should be grateful to my American readers for being kind enough to help me to go on with my studies on nectar by sending me even very small samples of honey or nectar, provided they are very carefully gathered on plants of the same species. I thank them in advance.

7 bis Rue aux Ligneaux,
Orleans, France.

(The milligram is the one-thousandth part of a gram. It is equal to 1-65 of a grain. One gram equals 1-28 of an ounce (abridged, gr.)

The cubic centimeter (abridged, c. c.) is about 17 minims. One c. c. of water weighs 1 gram.)

World's Corn Palace at Mitchell, South Dakota

Those who have been to Mitchell, South Dakota, have seen this wonderful building. It is large and fireproof, erected at a cost of $275,000, seating 5,000 people and re-decorated annually at a cost of $10,000 in corn, grain and grasses. The most marvelous exhibit of nature's wonderful colors blended into works of classic art by skilled decorators.

Each year the last week in September the annual "Corn Palace Festival" is staged. Attractions are brought here direct from the amusement centers of the East. For the past three years a show has been brought direct from Chicago with orchestra, scenes and lighting effects. Many of the nationally known bands have played in the Corn Palace. Theodore Roosevelt, Leonard Wood, William Jennings Bryan, William Howard Taft and a score of other world known men have attended these Fall Festivals and spoken to immense crowds.

Hundreds of bushels of corn and other grains and grasses, all in their natural colors, are used in the elaborate scheme of decorations used on the exterior and interior of the Corn Palace. It has come to be recognized as one of the big indoor shows and fall festivals of this country and is each year given columns of publicity in the big amusement publications of the show world, as well as receiving favorable comment from the various trade publications and daily papers of the Middle West.

In connection with the annual Corn Palace Exposition there is conducted a South Dakota Corn Show and display of the various agricultural and garden products of the Sunshine State.

What a chance for the beekeepers of the Dakotas, and even neighboring states to feature honey where it will reach a great crowd of possible customers. If interested, write to the Chamber of Commerce, Mitchell, South Dakota, and get the details of the annual show and just what may be expected in the way of a honey exhibit.

Honey in Store Opening

Neal's Stores of Winnipeg give Manitoba honey a boost by featuring it in a shadow panel in the advertisement announcing their formal opening. They give it place among the six items most prominently featured in their advertisement, which is good advertising for Manitoba honey.

Queen-Rearing for the Amateur---Part 2

By Allen Latham.

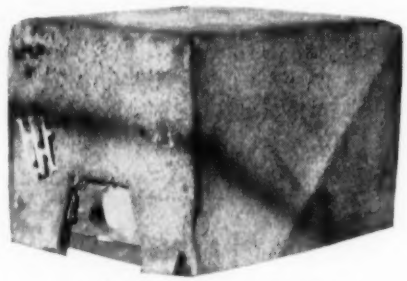
THE easiest part of queen-rearing is the growing of the virgin queens. By following a few simple requirements anyone can get good virgins. Very true it is that thousands of poor virgin queens are reared every summer, but they are poor only because certain rules have been broken. The really difficult part in the rearing of queens is the turning of a virgin queen into a laying queen. Possibly I should not use the word difficult here, for it is not difficult if one is prepared. Rather it is the expensive part of queen-rearing.

One can rear up to 50 or even 100 virgin queens in one colony, but just prior to the time those queens are to emerge he must isolate each one. The fifty queens call for fifty separate dwelling places. Leave those fifty cells one or two hours neglected and many of the inmates will be dead or ruined. Just as quickly as a virgin queen emerges, even while she is weak and with legs so soft that she walks clumsily, and with wings absolutely incapable of flight, she will turn at once to cells containing other virgins about to emerge. She begins at once to gnaw into these cells. She gnaws a hole on the side of a cell and is very apt to bite and mutilate the inmate. At this stage she rarely, if ever, stings the inmate, statements to the contrary nothwithstanding. After gnawing a hole in one cell she proceeds to another, and it is only a matter of a few minutes before she has mutilated ten or a dozen cells. The worker bees will not tolerate a mutilated queen cell, but at once continue its destruction, and pull its helpless inmate out and eject her from the hive. Sometimes a virgin wanders away from the queen cells just as she emerges, and an hour afterward, when she has gained much strength and agility, will return and her destruction of cells then is very rapid. If perchance several other queens have emerged in the meantime she will search these out and sting each fatally. Thus it will be seen that mature cells must be cared for promptly.

It is the care of mature cells that keeps many beekeepers from rearing their own queens. They feel that they must have an expensive outfit in the way of mating nuclei. It is possible in several ways to avoid much expense in this matter. I will describe three or four for the small beekeeper.

One of the very best ways for a small beekeeper is to dequeen all those colonies which he wishes to requeen, two or three days prior to the maturing of the cells. Then, on the day the cells mature, he will place a cell between the top bars above the middle of the brood nest in each of the dequeened colonies. The virgins will emerge under the best possible conditions and, mating, will become the natural mothers of those colonies.

If the procedure just described means interference with a prospective honey crop, as there will be two weeks in which no eggs are laid in the colony, it may be well to modify the procedure. Instead of destroying the queens, form temporary nuclei, giving to one division all the mature brood queens and young bees and to the other, on the old stand,



A baby nucleus mating box

only frames of young brood and whatever bees return. The two divisions can be placed side by side, but with entrances reversed. Under such conditions the part with the old queen will develop very rapidly, and the old queen will lay even better than had no division been made. The cell is given the other division and the new queen is allowed to become established there. After the young queen is fully established and laying well, the old queen is disposed of and the hive she is in reversed, so that the entrance is the same as the other division. Three days later the brood is all crowded into the hive with the young queen, any surplus combs being used to fill a body to be placed over some weak colony or else used for increase. This operation not only requeens but at the same time usually disposes of swarming for that season. Excellent results usually follow.

If the honeyflow is on and it is not wise to interfere at all with the regular full colonies, one must resort to small nuclei. Now it happens that queenless bees are very tractable, and it is a very simple matter to get a few queenless bees to care for a virgin queen until she is laying. Even fifty bees will in hot weather suffice, though it is not wise to be thus economical of bees. It is better to plan at least 200 or better 500 bees for each virgin.

The illustrations depict a very simple mating box used by the writer. I first saw simple mating boxes used by Henry Alley, of Wenham, Massachusetts, back in the early Nineties of the last century. Alley used boxes only about five inches each way. A young man who temporarily went in with Alley, by the name of Pratt, took a great fancy to these nucleus boxes and a few years afterward the bee periodicals became greatly permeated with articles about baby nuclei. Pratt took the pseudonym of Swarthmore. Many beekeepers today have a belief that Swarthmore developed the baby nucleus for mating queens, but he did not. Henry Alley had used them for years before Pratt was out of boyhood. I knew Pratt before he ever met Alley, and Pratt at that time knew nothing about baby nuclei. I saw scores of these nuclei in Alley's back yard before Pratt ever met Alley. I did not like Alley's type of box and made up one more to my fancy. As the pictures show, it is a mere box with a loose bottom and with a small hole at one end. The box is covered with folded roofing paper to protect it from the weather. In the matter of expense, I will say that the cost is trivial, not even ten cents, aside from labor.

The use of this box is very simple. Of course, in the lapse of years, I have made some improvements over my first box. The last and best is a zinc door which pivots on a wire nail and hinges into a bent piece of zinc. A motion and the entrance is opened or closed at will. A section of poor honey or of unfinished character is wedged in the front end of the box. One might think at first that it would be better to put this section at the rear, farther away from the entrance, since there are to be so few bees to guard against robbers. If you have kept bees long you have learned that our first thought relative to bee action is apt to be wrong. It is in this case. If the section is placed in the rear the nucleus will be robbed out under any provocation. If placed in front most of the boxes will be safely guarded even though a robbing riot occurs. The reason is simple if you care to think it out. I will spoil your fun by giving the reason now. After the section is wedged in place, a ripe cell is fastened just back of the section to

the roof of the box. This is done by dropping some melted wax on the roof while the box is upside down and then setting the base of the cell into the melted wax. The box is then stocked with bees and set aside.

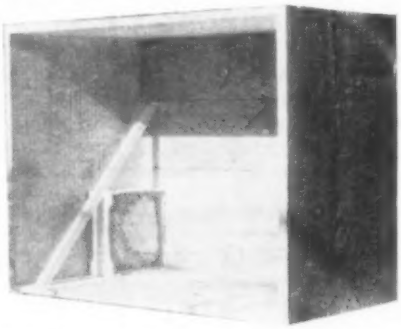
If the weather is warm, no harm will result if all the cells are cut out at once and each given a place in a mating box. When all the boxes are ready the bees of the cell-building colony are shaken or brushed into an empty hive or smooth walled box and carried to where the mating boxes are. With any sort of small tin box or part of a candy box, or even a match box, scoop up a cupful of bees and dump same into a mating box, at once replacing the bottom. I can easily stock fifty such boxes in a very few minutes. As I have performed this operation something like 15,000 times in my life, it has become very simple. The boxes are then placed in a pile in a dark place, cellar, or even dense shade of a tree. If left outdoors it is well to cover with several bran sacks to conserve the heat.

The pile of boxes will become warm from the excitement of the imprisoned bees and the virgins emerge under good conditions. The boxes are left thus two or three days. It will then be safe to set them out near night and open up each. Seven days later, if weather has been good, the queens will be available for use.

If one does not care to make these small boxes he can use a very simple expedient. Wooden boxes are becoming more and more scarce, but it is still possible to get from your grocer small wooden boxes in which canned goods have come. Remove cover and fasten a section in one upper corner of box. Make a small hole near a section. Stock this box as was done with the small ones, but use not less than 500 bees. These large boxes are more liable to robbing out and they will not work so well in a dearth of honey. In a honeyflow they work to perfection.

If there is a dearth of honey it is well to feed the nuclei. Now the feeding of nuclei is generally attended with robbing. Mr. Alley had a method of feeding which was very simple, but to my mind unsatisfactory. He had little tin cones stuck into the top of the mating boxes. Each cone had a tin cover, and I think that cloth was fastened over the other end. Alley went about with a coffee pot filled with syrup and filled these cones. My own experience is that with liquid feed the danger of robbing mounts to a danger point. I went through a period of experimentation for years, in which I tried out feeds and feeders of many varieties before I chanced upon the right one. Arthur C. Miller gave me the first help when he told me to use soft brown sugar.

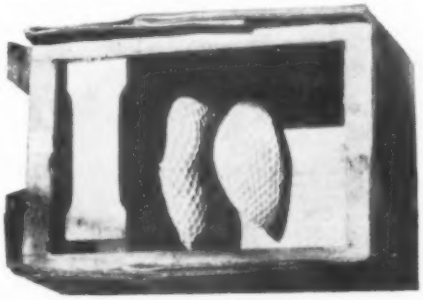
I used the sugar, but with very poor results. Yet, it solved the problem of robbing, but it was unsatisfactory in other ways. There was, for one thing, too much absconding, when brown sugar was used. Bees



Any box, holding one-half to one bushel, can be used for a mating box

abscond very readily from these baby nuclei, and anything at all unsatisfactory aggravates that tendency to abscond. The solution of the robbing problem lay in the use of solid or semi-solid feed. I switched at once to candied honey. The results were not 100 per cent perfect. The smell of the honey caused robbers to hover about the entrances all the time and there was much robbing. At this time I was experimenting on candies for queen cages, and happily tried out some of these candies in my mating boxes. The results were all I could wish for.

These small nuclei are now fed as follows: Honey is warmed in a kettle to near the boiling point and then XXXX sugar is stirred into the honey. One pound of sugar is used to about five ounces of honey. The amount of honey varies with its ripe-



Interior view of baby nucleus, showing section in place. This nucleus has cared for a queen for several days. Note the two small combs built back of the section.

ness. The mixture is then poured into a form lined with paper. The resulting slab of feed, about one inch in thickness, is then broken into cakes about two inches square, and these cakes are placed right on the bottom board of the mating boxes. A cake is given within 48 hours after setting the boxes out and usually lasts until the queens are mated. If it does not last, a second cake is given. Feed is very essential at the period of mating. When these baby nuclei are not well fed they are apt to swarm out at the time the virgins go out to mate. If they are busy caring for the feed they almost never swarm out when the virgin leaves the hive. Again, if they do not swarm out when the virgin goes out, they are very likely to pounce upon her when she returns. I have known lots of virgins set out, without the boxes being fed, to suffer to an extent that not one queen in four ever became a laying queen. They often are killed outright, and, if not killed, maimed by stings in the legs or joints of the wings. Queens do not suffer death from a worker sting unless the sting strikes them in the body. Stings in the legs make cripples. The presence of feed at the time of mating eliminates almost completely this tendency to ball the queen upon her return from her mating trip. Even with the feed, from one to two per cent of queens will turn up crippled in leg or wing.

It is to be understood that the baby nucleus is not a normal condition for the honeybee. When, however, proper precautions are taken, its use is safe, and since the outfit is inexpensive the occasional loss of a queen can be ignored.

There is still a third method whereby a small number of cells can be cared for at slight expense. Many small beekeepers sacrifice one or two hive bodies to the mating of queens. They put partitions into the bodies so that a body has three apartments. A special bottom board is made or one fashioned so that there are entrances for each apartment. Each apartment will accommodate two or three combs. By using very thin partitions four apartments can be made, to accommodate two combs each. Thus a tenement nucleus is formed which will take regular full sized combs, and nuclei are made to mate the young queens. Excellent results can be had by this arrangement.

Connecticut.

Honey For Easter

Why not advertise honey for the Easter breakfast? The Commonwealth Edison Electric Shops of Chicago, in an advertisement of various electrical appliances, ran this in an "Easter Breakfast" menu: "Waffles with Honey (on the electric griddle)." The same idea can be carried out in many ways. Honey goes well with many things that people have for Easter breakfast. For instance, honey is mighty good with toast, and it makes griddle cakes, or waffles either, fit for an epicure.

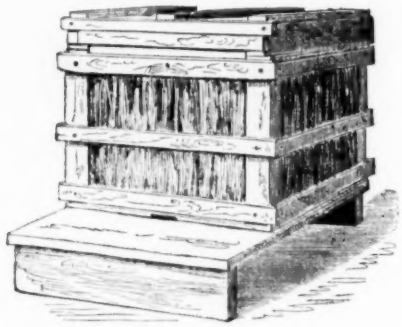
Personal Recollections of the Editor

Hives of the Old Days

THE article published on page 124 of the March number, induces me to say something about my recollections of the old-time methods, the last of the straw skeps and the first movable frames that I saw. It has been difficult to get the old country beekeepers to abandon the straw skep; in fact many still keep it, some actually holding that they cannot afford to "waste the skeps that are still good," others hesitating to get into new methods because they wish to continue what their fathers did. Some beekeeping instructors say that the average countryman cannot learn to keep bees the modern way.

When we came to America, in 1863, my father secured two hives of bees, in square boxes. He had kept bees in France in the Debeauvoys hive. This hive, at that time, was a side-opening hive, with a door that could be removed to handle the frames and could be pushed in to reduce the dimension of the hive when a less number of frames was used. He transferred his bees into that style of hive. The frames were not square, but diagonal, so that the hive might have a slope to let the water run off. Shortly afterwards, having read Quinby's "Mysteries of Beekeeping" and Langstroth's "Hive and Honey Bee," he changed the shape of the frames to square and made them hanging on rabbets. The hive he used contained about sixteen frames 12x12½ inches and would be now called by the name of "long idea hive," a single story hive. At that time, little square boxes were used for supers, each holding about five pounds of honey, six of them on each hive. As these boxes had for entrance only a small opening, about 1x2 inches, it was difficult for the bees to ventilate them, and I remember wondering why the bees would refuse to occupy them, when they would build combs on the outside of them and even, sometimes, under the bottom board. We learned the reason later.

There is an advantage to straw hives which my father realized at all times; that is, they are warmer in winter and cooler in summer than hives made of lumber. So he went to work and manufactured straw movable-frame hives. In his 1866 edition, Quinby gave the picture of a movable-frame straw hive, for winter. Charles Dadant wanted to use them all the year round, so he made a few changes in them, but their appearance was very much like that of the cut given by Quinby. The hives had four posts, two inches square, for corners, a wooden base and a wooden top rim, the former cut with an entrance, the latter grooved for the frame supports. But instead of laths, on the inside, to hold the straw, he used crinoline wires. This would be a joke at present. But at that time, when all the ladies wore crinolines, or hoop skirts, these hoops were made with strong,



Straw hive used by Quinby.

thin, flat, steel wires, just right for the purpose. When a crinoline was worn out, the wires were still good, but worse than useless. So crinoline wires were without value and easily secured and they were just right for fastening the straw of a straw hive, by using three strands and wiring them to the lath through the straw. As for straw, it required rye straw, not run through the thresher. A neighbor, having a lot of rye in his wheat field, deplored the fact that this rye would lower the value of his wheat. Father offered to have his children pull out the rye, carefully, and remove it, provided the

This basket, made of twisted straw like the old-fashioned skeps, has been used for over forty years, especially to carry eggs.

neighbor would see to it that the grain was thrashed out of the heads of it, for him, without damaging the straw. In this way, he had a good stock of choice rye straw for hives. The hives were splendid for wintering the bees, much better indeed than any wooden hives. Quinby had recognized this, for he wrote, page 300 of his book:

"We all have heard of the great success in wintering in the old-fashioned straw hive, fifty or a hundred years ago. They were discarded, it is said, on account of harboring the moth-worm, and their inconvenience. Mr. Langstroth says: 'Straw hives are warm in winter and cool in summer.' Again he says: 'Hives made of wood are at the present time superseding all others.'"

Why did we not continue with the straw movable-frame hives? For two or three reasons. First of all, they were so easily damaged by mice that it was irritating. Whether they contained bees or not, the mice would cut into the straw, apparently for mere sport. Perhaps they would find in it an occasional grain of rye. But straw is easily cut into. Not so with slough grass, which we still use for cover over the oilcloth that we keep on top of the brood combs in spring and fall. This slough grass, or wild timothy (Beckmannia erucaformis), is exceedingly tough, so that it is not so attractive to mice as the rye straw. But it is less of a non-conductor of heat, for its stems are not hollow like the straw of rye. Another reason is that the building of such hives is much more expensive in labor than the building of all-wood hives.

The straw cap, which is shown herewith, is just a copy of the straw caps of skep countries. Charles Dadant manufactured several of them in the early days. This is probably sixty years old and has been in use for many years as a vessel in which to carry eggs. The straw is sewed together with hickory bark strips, as tough as leather or tougher. Many similar baskets are in use in Europe.

Can a way be devised to go back to straw for hives? The high cost of lumber would indicate its desirability, if the two objections mentioned could be overcome.

When Charles Dadant enlarged his apiary greatly and recognized the futility of making straw movable-frame hives, he was still in the difficult stages of a beginning on a little brush farm, suitable only for grapes or bees. He had built a loghouse in 1863. A lean-to, for a kitchen, had been built out of fine, wide lumber, which was exceedingly cheap in 1863. But five years later clear lumber had already doubled in price. He could not afford to buy it for hive making; so he tore down the ceiling of the

lean-to, made of fine boards, to build a lot of hives for the increase, and he, often, in after years, referred to this experience, which he recalled with a great deal of pleasure as depicting the hardships of his beginnings in practical beekeeping.

Since the above was written, Henry Dadant has secured a straw movable-frame hive of the ten-frame Langstroth pattern. In this the straw is not placed vertically, but horizontally. This would appear to make it less practical in turning off the rain. But that hive is in very good shape, though very old, and we have placed it in our museum of beekeeping curiosities.

Southwestern Honey Sources

No. 3 — Some Desert Trees

By Frank C. Pellett.

TO one familiar with the luxuriant forests of the humid regions, the desert country seems strangely barren and dead. Such trees as can stand the extreme dryness are shrubby and stunted in appearance and much scattered. Each individual tree must have a wide area of surface from which to draw sufficient moisture from the dry earth to keep it alive. Most of these trees, however, are important sources of nectar, and although the blooming period varies according to the moisture supply available, much honey comes from the trees and shrubs common to the arid regions.

The Useful Mesquite

The impression of one coming for the first time into the region where this tree predominates is likely to be of a vast neglected orchard. The mesquite roots very deeply, and apparently is more dependent upon the underground water supply than upon the rainfall, although its blooming is greatly influenced by rainfall. The tree reaches a larger size in the eastern portion of its natural habitat and in the lowlands near water courses in the dryer sections because of more soil moisture.

The mesquite tree attains a great age and it is probable that some of the larger ones found in the southwest may have stood for several hundred years. The wood is heavy and hard and at the same time strong and durable. On account of the scrubby nature of its growth it is little suited to commercial purposes other than fence posts and firewood.

On the light soils of southern New Mexico one often sees mesquite trees so scrubby as to appear to be mere bushes with nearly the entire tree covered with drifting sand, leaving only the tops of the branches exposed. Since the roots are immensely developed under such especially dry conditions, we find the strange fact that settlers dig for their firewood. There is nothing worth burning above ground, but by digging out the entire stump considerable firewood is secured. On better soils and with more soil moisture the mesquite grows to be a tree several feet in diameter, although still retaining its scraggly appearance, which, as already stated, resembles an ancient fruit tree.

The screw bean is readily recognized by the seed pods from which it gets its name.

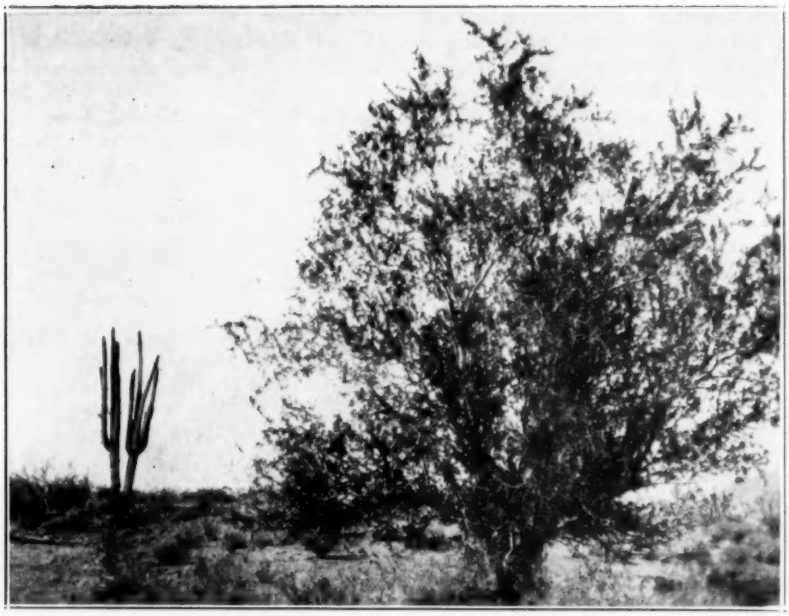
The mesquite most important to the beekeeper is **Prosopis juliflora,** which grows over a wide area from Kansas south to the Rio Grande in Texas and westward to eastern California. The fragrant yellow-green flowers appear in spring from April to July, depending upon the weather, and in wet season sometimes there is a second blooming period. It is the most important source of honey in the Southwest over all the area of its principal range. The honey is light amber in color and of good quality, and under favorable conditions the yield is very heavy. Reports from resident beekeepers indicate that the yield is more dependable on sandy than clay soils.

The Screwbean

The screwbean, also known as screwpod or tornillo (**Prosopis pubescens**), is a species of mesquite found principally along water courses from Texas to Arizona. It is readily recognized by the peculiar seed pods shown in the illustration, and from which it gets its name. Like the mesquite, it is a valuable source of nectar and the honey is sold as mesquite honey. Some beekeepers regard it as more dependable than the former tree, but since it occupies a much smaller area it is not as important on the whole.

It is difficult to appreciate fully the importance of the mesquite trees to the arid countries where they grow. In regions of light rainfall the natives are often hard pressed to meet the necessities of life, and the mesquites serve a surprising

The green branches of palo verde give the impression of luxuriant vegetation when the tree is entirely leafless.



The ironwood tree grows in dry washes in regions occupied by giant cactus.

number of purposes. The pods are often fed to the cattle for fodder and at times used for food by the Indians and Mexicans as well. When pastures fail, the cattle browse the leaves, and sometimes the trees are cut to give them access to the entire supply. Sometimes a drink is made from the pods. Inks and dyes are made from the tannin secured from the wood, and this same product is used in tanning hides. A clear gum exudes from any broken surface, and this is at times sufficiently abundant to provide a source of income to children who gather it for sale. Since mesquite trees root so deeply, they may be depended upon to survive the most extended drouth and to bloom again with the first rain, thus providing ample forage for the bees.

Ironwood

Numerous eastern trees are known locally as "ironwood," including the ti-ti of the Southeast, coma of Texas, the hop-hornbeam of the eastern states, as well as the mesquite already mentioned. To none of these trees, however, is the name so appropriate as to the ironwood of Arizona, **Olneya Tesota,** which is a common tree along desert water courses in a restricted region in Arizona and adjacent California and Mexico. The wood is very heavy, with crooked grain and dark color. The grain is too uneven and checked for use except as firewood. It commonly grows to a height of 12 to 15 feet, although I have seen a few specimens of much larger size. Like most desert trees, it assumes a bushy form, with a short, thick stem or trunk. The leaves remain on the tree over winter, falling when the new ones appear. They are compound, similar in appearance to the acacias, and of a dusty green color. The purple blossoms resemble small pea blooms. The blooming period varies somewhat, depending upon moisture supply, from spring to early summer.

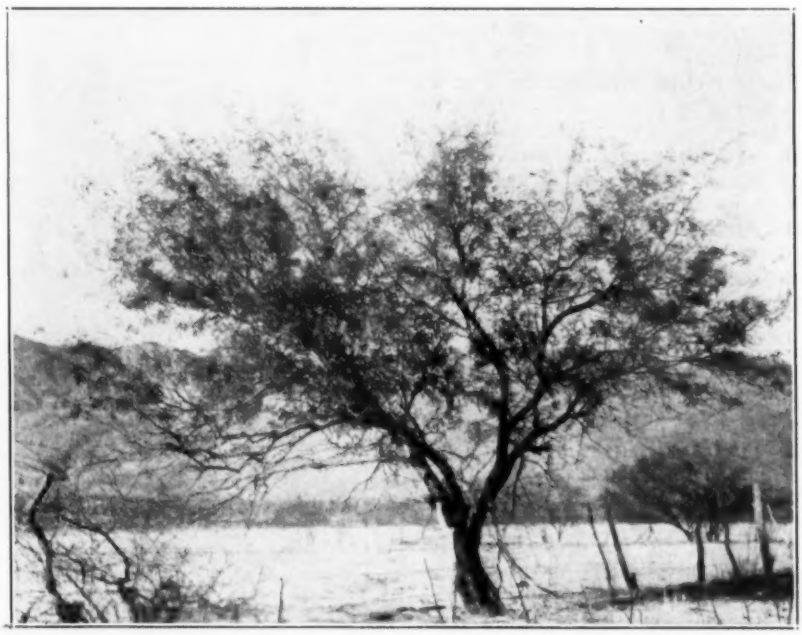
Beekeepers in southern Arizona regard it as an important source of honey, although, like most desert trees, uncertain in its yield. The honey is said to be light amber in color and of good quality. In favorable locations a super of honey per colony is sometimes secured from ironwood, but I have found no such yields reported as are occasionally gathered from mesquite. Since the tree occurs with mesquite and palo verde, the honey is likely to be more or less mixed with that secured from these trees.

Palo Verde

The palo verde, or green bark acacia **(Cercidium torreyana),** is a tree of striking and unusual appearance, common to a limited area in southern Arizona and adjacent California and southward. The bright green color of the bark of both trunk and branches gives the appearance of luxuriant vegetation when the tree is entirely leafless. The leaves appear in early spring, but fall again very soon. The range of this tree is restricted to desert regions where nature makes careful provision for the conservation of moisture. Since much moisture is lost from transpiration through the leaves, many desert forms shed them quickly after the spring rains have passed. The bright green of this tree offers a striking contrast to the dreary and dead appearance of most desert shrubbery throughout most of the year.

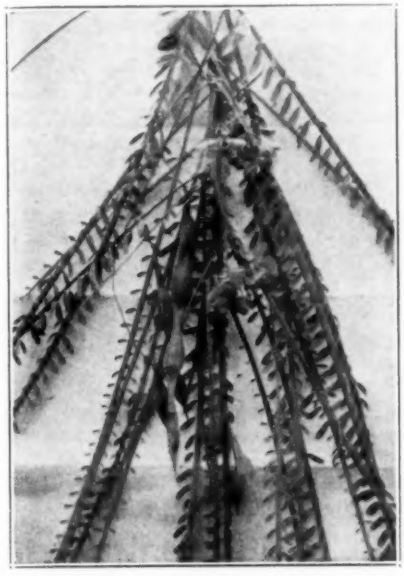
The palo verde attains a height of twenty or more feet, and with its spreading and bushy top provides welcome shade to the traveler in a region where shade is scarce. The wood is soft and of little commercial use except for fuel.

As a source of honey, palo verde is far more important than seems to be generally recognized. H. Wedgworth, of Florence, Arizona, informed the writer in private conversation that he sometimes gets a carload of honey from this tree. He describes the honey as of light yellow color, equal to valley alfalfa in



The mesquite bears close resemblance to an old fruit tree.

both body and flavor. The flavor of palo verde honey is distinct, somewhat similar to the taste of the bark of the tree. Beekeepers report that the yield is much more dependable on lower lands than on the dry hills, due to the greater quantity of available moisture. On low lands it is regarded as quite dependable, with



Flowers, seed pods, and leaves of retama.

a honeyflow from the higher lands only in the seasons of more than average rainfall.

Retama

In southern and western Texas is a small tree known as retama (**Parkinsonia aculeata**), which is related to the palo verde and somewhat similar in color of branches, but much smaller in size. It has slender branches bearing yellow flowers, which are followed by bean-like seed pods as shown in the picture. It is also known as horse-bean. It is also found in the valley of the Colorado River in Arizona and California.

It has a habit of blooming at irregular periods from spring until September, a trait common to many desert shrubs and trees. It is often mentioned as attractive to the bees by Texas beekeepers, but the writer has not found reports of surplus honey from this source.

Canadian Pacific Boosts Beekeeping

A beekeeper was given welcome publicity by the Publicity Department of the Canadian Pacific Railroad which sent out to hundreds of papers a story headed "Manitoba Bees Set Out to Make a Record," with a picture of the apiary to accompany it. An extract from the human interest story follows:

"Who ever heard of a hive of bees that in one day gathered no less than 25 pounds of honey? If anyone doubts that the busy bee can be as busy as all that, refer him to Mr. W. D. Wright, who has a large and prosperous apiary near Souris, which is in southern Manitoba, on the Canadian Pacific Railway, and if anybody doubts the fertility of the Province of Manitoba or wonders if the summer suns there shine down on wide fields of glorious bloom, let him read the following, which is gathered from the columns of the 'Souris Plaindealer:'

" 'It was on July 31st last that the hive of bees beside which Mr. Wright stands in the above picture gathered and stored the 25 pounds and established a record for this continent and perhaps for the whole world. There was no doubt about its being true, because the Provincial Department of Agriculture made the test. From July 13 to August 3, the hive stood on a scale and every evening when the bees' work was done and they had gathered around their fireside to talk it over, the weight of the hive was taken. The first gain was on July 14, when 1¼ pounds was brought in, and from that quantity the daily take varied up to 14 and 16 pounds. But on July 31 the bees got together and made a special effort just to show what they could do in the way of establishing records.

" 'Perhaps they had just discovered that their efforts were being recorded. Anyway we can imagine that the night before, the queen called the crowd together, or perhaps only the captains of teams, and said something like this:

" 'Now girls, the world's got its eye on you and tomorrow's the day we go over the top. Any lass that comes in here with less than her full load gets into trouble, and the lass or team bringing in the biggest bag gets a wax medal with my picture on one side and her own name on the other.'

" 'And how they worked that day! They worked all the other days of the season, too, because the total honey produced for the season was 496½ pounds. Of course there were two or three rainy days when they stayed at home and did chores around the hive, and two or three other days when it didn't rain, but they stayed at home anyway to look after the local elections or something like that. And when it was all over no doubt the queen said, 'Well, it's been a pretty good working season, I'll tell the world,' and as always is the case, the queen was right.' "

Well, Well, Why Don't Brains and Law Go Together

A bill, introduced into the Assembly of the New York State Legislature, on March 22nd, known as Assembly Bill 1889, introduced by Hon. Edmund F. Cooke, of Alden, Erie County, reads as follows:

"An Act to amend the penal law, in relation to the keeping of bees. The people of the State of New York, represented in Senate and Assembly, do enact as follows:

"Keeping of bees at certain times and places prohibited. A person who, at any time between May fifteenth and September fifteenth, inclusive, in any year, shall keep honeybees in a village of one thousand or more inhabitants within five hundred feet of any dwelling or cultivated garden, shall be guilty of a misdemeanor and punishable by a fine of twenty-five dollars. Each calendar day that such bees are so kept shall constitute a separate violation of this section."

In discussing this, R. B. Willson remarks that if this becomes a law many apiaries that are highly productive, constituting a source of profit to individuals and adding materially to the wealth of the state, would have to be moved from locations, where, though within village limits, they bother no one. The home yards of many commercial beekeepers, where queens may be reared or disease treated, are thus located.

This is a brand new scheme, as it is a proposed state legislation. In the celebrated case of Clark vs. the City of Arkadelphia, Arkansas, 52 Ark., 23, it was decided that a general city ordinance declaring bees a nuisance was too broad and not valid. The nuisance must be public and general in its character.

In the case of a private nuisance, persons injured or annoyed have a remedy as set forth in the case of Olmstead vs. Rich, 6 N. Y. Supt., 826, where nuisance was proved and a permanent injunction served on the defendant and the bees ordered moved.

These are the two famous decisions which have so far governed city ordinances. What shall the status be in the case of a state law? Those who are to be directly affected by such a law should write at once to their representatives at Albany.

Canada's Honey

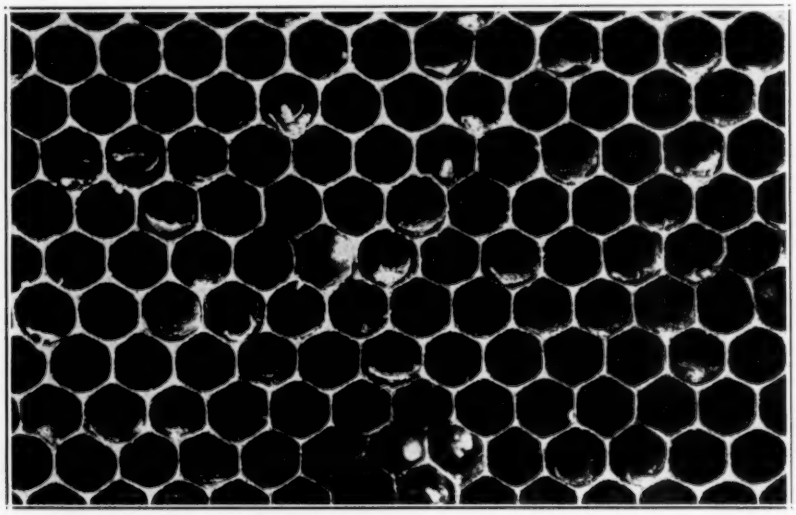
Commenting upon a recent meeting of the Ontario honey producers at Toronto, the Halifax Chronicle said:

" . . . the one problem that seemed to be uppermost was where to sell the output. Canada now produces twenty-one million pounds of honey per year, and consumes about nine million pounds. Wider markets, more customers, as London Advertiser remarks, are the need of the apiarist just as it is of all Canadian farmers or manufacturers."

Water-Soap-Formalin Treatment for American Foulbrood

By George H. Vansell.

MANY enquiries have been received concerning the report in the American Bee Journal, pages 55 and 446 (February and September), 1925, on the use of a water-soap-formalin solution as a sterilizer for combs infected with **Bacillus larvæ**. The use of this solution is increasing rapidly. Universal satisfaction is apparently the only report that can be made as to results in the field.



Loosened American foulbrood scales, after treatment with the water-soap-formalin solution.

A brief discussion of the process and method may be of interest to the American Bee Journal readers. No originality of method will be apparent, for the process is practically identical with that published earlier by Dr. J. C. Hutzelman and his associates in Gleanings. However, the solution containing soapy water and formaldehyde was, as far as I know, first used here at the university farm in connection with experimental trials of a series of materials being tested for efficiency in comb sterilization. The larger part of the actual field tests and bacteriological culturing was done by N. Fiat, a graduate student here from Russia.

Since the solution is the newest phase of the matter, that will be described first. The soap found to be most suitable is the liquid cocoanut oil soap which is in such wide usage today in washrooms everywhere. The particular soap used here (because it was readily available and miscible with water) is made from pure potash and cocoanut oil by Michel and Pelton Company of Oakland, California. Some of the other soaps tried seemed to make the combs crumble. Rainwater has been used largely in these experiments. Other waters will require a somewhat larger quantity of soap, because part of the soap is precipitated by the lime, magnesium, etc., in hard water. Ordinary commercial formalin or formaldehyde testing from 37 to 40 per cent is satisfactory. The proportions of these materials are as follows:

Water (soft preferably) ___4 quarts
Liquid soap_____2 (or more) ounces
Formalin (formaldehye) ____1 quart

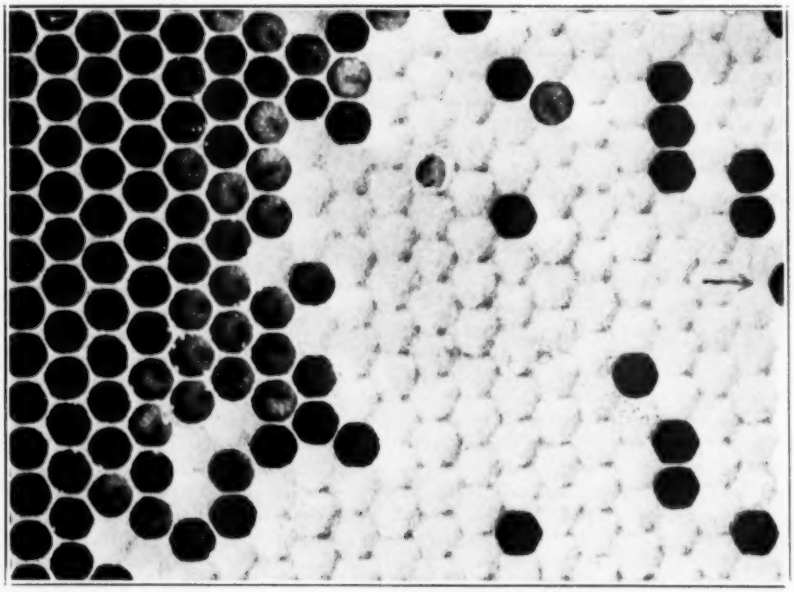
The soap is stirred into the cold water, after which the formalin is added and the mixture stirred again.

The treatment of the infected colony remains the same as when the combs were destroyed, the bees being shaken or brushed into a clean hive with foundation. Some beekeepers still practice the double shaking. After an interval of forty-eight hours from shaking, the colony may be supplied with clean drawn combs.

The combs are run through the processing treatment as advertised with the Hutzelman solution. The honey is first carefully extracted and the combs soaked in water, twelve or more hours, to remove the clinging and candied honey. Cells of brood are opened by scratching with a steel mechanic's brush or a curry-comb. This is not done by all beekeepers, but the practice is recommended for safety. The excess water is removed by the extractor to prevent too great dilution of the sterilizing solution, but drying is not necessary. The combs are then placed in the water-soap-formalin bath for forty-eight hours.

The comb vat, which is tightly covered, is filled and emptied through a hose connection and keg which is hoisted with a block and tackle arrangement. This eliminates handling the solution and reduces evaporation. In addition, the vat is thereby filled slowly, allowing the solution to run into the cells as the level rises. After sterilization, the solution is thrown from the combs in the extractor and saved for later use.

The formalin odor clings to the combs for a long time. They must be dried and aired thoroughly to remove this. As the combs dry, the old foulbrood scales will be observed



Healthy brood being reared in water-soap-formalin treated comb, originally filled with American foulbrood

to loosen and curl up in the cells, to be later removed by the bees without difficulty.

The whole process may be briefly outlined as follows:

1. The bees are shaken or brushed into a clean hive on frames of foundation.

2. Every cell is uncapped and all honey extracted. The sealed brood cells should be opened with the

Examining healthy colonies in which treated combs have been used through the season.

extracting knife or punctured by scratching with a steel brush or other instrument.

3. The combs are soaked in water for twelve hours to remove excess honey.

4. The water is thrown out in an extractor to prevent diluting the water-soap-formalin solution.

5. The combs are placed in the empty soaking vat in a normal position and held in place by weights or by a bar of metal. The formalin solution covers the frames slowly from the bottom, thereby filling each cell completely.

6. The combs are left in the sterilizer for forty-eight hours.

7. The solution is thrown out of the combs in an extractor and saved for further use.

8. The combs are dried in the open air for several days, after which they are ready to be used in any colony.

The solution not only sterilizes, but loosens the dried bodies of dead larvæ so that they shake out or are readily carried out by the bees.

Where the work is done carefully no fear may be entertained concerning recurrence of disease in the treated combs. The combs are actually sterile of all life, as shown by cultur-

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Untested	$2 00	$ 8 50	$15 00	$1 50	$ 7 50	$13 50	$1 25	$ 6 50	$11 50
Select Untested	2 25	9 50	18 00	1 75	9 00	15 00	1 50	7 50	13 50
Tested	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	21 00

Select tested, for breeding, $7.50.

The very best queen, tested for breeding, $15.00.

I sell no bees by the pound or nuclei, except with high-priced tested and breeding queens.

Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

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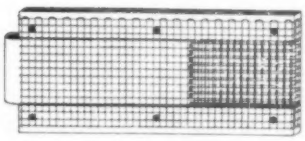

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Guaranteed in every way. Every queen a good queen. Introducing cage furnished with each queen. Let's introduce 'em right. Untested, in May and June: 1, $1.25; 6, $6.50; 12, $12.00. After June: 1, $1.00; 6, $5.00; 12, $10; 50 or more, 75 cents each.

Send for price list on bees, tested queens and cages.

J. F. DIEMER, Route 3 Liberty, Mo.

Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

Marshfield Manufacturing Company

Marshfield, Wisconsin

ing. Healthy brood is reared in them as though no disease had ever been present.

The cost of the solution has averaged 1.4 cents per comb. This represents only the material absorbed and lost during the manipulations, since the cost of the original volume of the solution (about 40 cents a gallon) is not included.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

A PLAN FOR TRANSFERRING

I have lately bought 20 colonies of bees which have been allowed to build combs crooked among the frames. I have no time for a painstaking method of transferring to movable combs. Will this plan work?

As early as the different hives show signs of strength I will set on each such strong colony a hive body with sheets of foundation. I will examine these frames from time to time and as soon as I find a queen on the frames will at once put excluder below hive with queen.

When 21 days are about up will reach down with knife into crooked combs and uncap stored honey as much as possible so bees will carry honey up. As soon as 21 days are fully past will take away hive of crooked combs and put additional hive body with foundation on top of hive body, which now contains queen and most of bees.

The old hive body with crooked combs and with no brood or queen I will set close to the entrance of the hive in which queen and bees are transferred and at right angles and leave till bees have left and gone into new hive. If any honey is left the bees can rob it out and carry it into new hive. When this is completed will carry away old hive and render combs and get frames ready for use as supers.

So far as I know these bees are absolutely free from disease and the robbing will cause no danger.

I have other business and cannot give excessive time to this transfer. It seems to me that the plan I have outlined will do the work and will take little time.

If it is not sound I would appreciate your telling me so.

I forgot to state that I am running for extracted, and this is a sweet clover section, with real honeyflow starting about July 1. S. DAKOTA.

Answer.—The success of your method will depend somewhat upon the season and the condition of the bees. If there was much honey in the fields, they might not carry up the honey as fast as you would like. On the other hand, if there is no honey in the fields your method might cause robbing. If the honey was robbed out of the old hive by the colony that came out of it, it would be well and good, but other colonies might help and carry a lot of it away even to some other apiary. Better connect the hive you wish to empty, with the colony that came from it, in some way, so the outside robbers cannot help empty it. For instance, you might do as they do in the French Province of Gatinais, with old skeps, turn the old hive bottom up and connect with the upper hive through a hole in the bottom board, closing it so the bees cannot get to it except from the upper hive.

You might hasten the moving of the queen into the upper hive by drumming the bees out of the old one into the other and follow the above mentioned method at once. Enough bees would remain with the brood to care for it. But the queen would not be likely to go back to it, if there is only say a two-inch square opening between the two.

INTRODUCING QUEEN

I have a colony of bees that appears to be queenless. They are in a double hive; that is, two hives, one above the other. They have plenty of stores, and there are plenty of bees, but no brood.

I have taken a frame of brood containing some recently laid eggs, and placed it in the upper hive, hoping they will rear a queen. Most of the bees are in the lower hive. Would it be better to put the brood frame in the lower hive?

I would prefer to introduce a queen, but presume it is too early to do so. Am I right? NEW YORK.

Answer.—No, it is not too early to introduce a queen, if you order one from the South. But judging by your letter, I conclude that the colony is still strong enough to rear a queen, and probably by the time you get this answer it will have some queen cells on the comb of brood given them, if there were eggs and young larvæ in the comb; unless they have one or more fertile workers, in which case they would not rear any queen cells, but you would find drone brood scattered in cells.

Under the circumstances, you should reduce the space they occupy to one hive body, because you must remember that the absence of brood is going to leave the colony quite depopulated, before the brood of the expected queen begins to hatch. So the space must be reduced. Be sure and leave them enough honey, so they may breed liberally as soon as the young queen begins to lay, which may be 21 to 25 days after giving them the brood. The colony will need attention and will be weak for some time It will probably not harvest much honey, but may build up into a good colony by summer.

SECTION SUPERS ADDED FOR ROOM

I intend to shake my bees and try to produce comb honey, and I wish you to tell me if I can put on a super that has drawn comb and small sections of capped over honey that I took off last fall, between the two bodies now (before the regular flow). The two hives are both rich and plenty of young bees, and I am afraid they will swarm. Peach, plum, cherry and apple are now in bloom, but I think our best honey time is when the locust blooms, in May. TENNESSEE.

Answer.—If you put sections between two hive bodies, both full of brood, there will be a tendency on the part of the bees to put pollen here and there in the combs of these sections, as they want the pollen close to the brood.

A better way, though perhaps not so likely to prevent swarming, would be to put the section supers above and put about two tiers of sections, with the full ones at the very top. This would help to draw the bees to the supers.

The Dr. Miller way was to remove one of the two bodies, with the least filled of the combs of brood, giving those removed combs to weak colonies or to colonies intended to produce extracted honey, then put on two or three stories of sections with full combs or full strips of foundation. I don't know of any better way. If your queens are young, if there are few or no drones, and if the bees have plenty of shade and plenty of ventilation, there will not be much danger of swarming. One thing necessary is to give them room before they make swarming preparations; for if they ever rear queen cells, they will be sure to swarm.

TRANSFERRING

I had three colonies of bees to die the past winter and No. 1 has about 60 lbs. of honey; No. 2 has 45 lbs; No. 3 has 35 lbs. I have some old square hives about rotten. Can't I transfer them on a good warm day into these new standard hives, with plenty of honey? They are raising young brood now and if I can get them changed they would build up fast; that is the way I look at it. Could I take the frames out of the old hives and set them in the new hives? Ought they to be put to one side of the hive? INDIANA.

Yes, certainly, you can transfer those bees into the new hives, especially if they have frames of the same size. But even if the frames were of a different size, it would be best to transfer the bees into them, and have them in good hives. The best time to do the transferring is during fruit bloom. Transfer the brood also.

It is quite important to have all your hives in the same size of frames, for you may then help one from another.

But before you transfer your bees, you must be sure that those old combs do not have any disease in them. It used to be, in the old days, that we could transfer from one hive to another without investigating first. Nowadays it is better to make sure that the old combs of the dead colonies do not have any disease. Make sure of that, then go ahead.

BEES CARRYING OUT WHITE BEES

I have one stand of bees I bought last summer. They were a 2-pound package. They are carrying out white bees; most of them are dead, but some of them can still crawl. Is this foulbrood? Must I destroy them, or can I shake them off in another hive and be rid of the disease?

I am thinking of buying five more packages and would not want to start with foulbrood. ILLINOIS.

Answer.—This is not disease. If it was disease the larvæ would be yellow or brown, not white. It is either that your colonies were short of stores or that they saw fit to destroy the drone brood, either because they had too much of it or because they were afraid of being short, owing to rainy weather or cool days. Do not worry over it. It will probably stop before you get this reply.

If you should see larvæ turn brown or yellow in the cells, then would be time for worry. As long as they are white, there is no danger of any disease.

RETURNING SWARM TO PARENT COLONY

Would it be all right to let a colony of bees with a clipped queen go till they swarm and then cut out the queen cells and return clipped queen and the swarm? Would they swarm again, or would that be a foolish act? PENNSYLVANIA.

Answer.—There would be nothing foolish about doing what you propose, although it might be more profitable to cut down the queen cells as soon as it is found out that

they are building some. But as to the results, it is difficult to tell. Much depends upon how badly the bees have the swarming fever. We have cut out queen cells and had the bees to swarm the very next day. Usually if you remove the pressure, by taking out some brood combs or some bees, or giving more room or more ventilation, and shade, or all of these things at the same time, it may be that swarming will be stopped. Usually, however, it is better to make a swarm with the bees and their queen. The tendency to swarm depends almost entirely upon the pressure that the season causes.

STERILIZING SOLUTIONS

There are several people using soap solution, potash and other substances for foulbrood. I would like to try them on my hives. Will you give us something in use of late? I have used a lot of formaldehyde, but for washing hives the other solutions would be cheaper.

On page 131, March, 1926, you speak of verdigris in copper or brass kettles. To clean them, throw in a small handful of salt and a half teacup of vinegar; set on the stove; while hot scrub out with a rag, and in two minutes it will shine like new. If it has been used for beeswax, heat enough to melt the wax. While cleaning, open the door, as the salt and vinegar create an unpleasant gas. NEW YORK.

Answer.—We are getting all the information we can concerning additional drugs for treating foulbrood combs. But we do not wish to recommend any unless thoroughly tested. By and by plenty of safe mixture will be recommended.

Regarding the disinfecting of hive bodies, by far the cheapest way, and the quickest, is to singe them, just as soon as the bees are removed from them, with a blow torch, which may be borrowed from a tinner or plumber. Painting them with coal oil and setting fire to them is good, too, but it requires more labor.

Your suggestions for cleaning verdigris are good.

DISPOSING OF GRANULATED COMB HONEY

1. If one has comb honey held over, partly filled, what is the best thing to do with it? If put in early flow would the bees fill them; or is it best to put it where the bees would carry it into the hives early, or what?

2. Can anything be done to prevent comb honey in boxes from granulating? IDAHO.

Answers.—1. It is hardly advisable to have the bees fill that comb with fresh honey, as it would be likely to be of another grade. Better have the bees carry the honey away and then give them the sections to be filled entirely over with fresh honey, if possible.

2. The best way to keep honey from granulating in the combs is to keep those combs in a warm, dry place. If you don't have a large quantity of such comb honey to keep over winter, place it in some corner of a warm room, where there is a fire all winter.

STIMULATIVE FEEDING

Do you advise feeding water and sugar, half and half, in spring, beginning at apple bloom time to promote brood rearing and to have a swarming before the honeyflow begins? MISSOURI.

Answer.—Feeding sugar and water is a good thing, to promote early breeding, especially if the bees do not have a large

(Continued on page 239)

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Time Saved]

Bee Supplies

Root's Goods at factory prices with WEBER'S service. Send us a list of your wants and we will quote you prices that will save you money.

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Two-Pound Package Bees $2.50 | Young Queen (1926) $1.00

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ATTENTION BEEKEEPERS

The Florida Boom has resulted in higher prices for both labor and lumber in South Georgia, but I have decided not to raise my prices on bees and queens for the present. I quote the following prices for 1926 delivery:

1 2-lb. package with untested queen	$ 4.25	1 3-lb. package with untested queen	$ 5.25
10 2-lb. packages with untested queen	37.50	10 3-lb. packages with untested queen	45.00
25 2-lb. packages with untested queen	90.00	25 3-lb. packages with untested queen	108.75
50 2-lb. packages with untested queen	175.00	50 3-lb. packages with untested queen	212.50
100 2-lb. packages with untested queen	325.00	100 3-lb. packages with untested queen	400.00

Two and three-frame nuclei at same prices as packages. Tested queens, 50 cents extra.

I have been in the bee business for over 15 years and have the best stock of three-band Italian bees I have been able to purchase or breed. There has never been any disease in this section of the state and Georgia is now entirely free of foulbrood. Certificate of State Inspector with each shipment. I guarantee safe delivery and will replace or refund on receipt of bad order report signed by the express agent at point of delivery. I do not recommend shipment by parcel post.

I can make shipment at any time after April 10th and have around 700 colonies from which to draw. I will not overbook, and suggest that you place your orders early.

I have been local representative for R. G. Dun & Co. for nearly 20 years and refer to any bank or banker in this section of the state.

N. L. STAPLETON, Colquitt, Georgia

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies

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We are paying highest cash prices. Tell us what you have and we will be glad to quote you prices f. o. b. your station or f. o. b. our station as desired. Write today.

Dadant & Sons, Hamilton, Illinois

(Continued from page 237)

amount of honey. But if they have honey, you would be able to promote breeding by uncapping a part of it from time to time. This would have the same effect as feeding and they find more appropriate food to produce pap, in the honey, than in the sweetened water.

As a matter of course, the colony must be quite rich in stores to apply this method. Usually, the honey harvested during apple bloom is sufficient to insure heavy breeding, especially if there is dandelion bloom and other bloom coming shortly afterwards and previous to the real honey crop.

As for swarming, we prefer to make the increase artificially, rather than urging natural swarming and, if we give sufficient room, shade and ventilation, we have little swarming. We then make the increase from colonies whose bees come too late for the harvest and thus retain our best colonies whole for the crop. But, of course, our queens must be produced from the brood of our choicest stocks.

TOO MUCH POLLEN

I have a good many combs that are nearly filled with pollen. Is there anything that I can do to save the combs, or must I cut them out and put in new foundation? This is something I have never seen discussed in the American ee Journal, but I think I get more practical information out of the American Bee Journal than anything else I have ever read on bees. OHIO.

Answer.—It is unusual to find combs with too much pollen. Usually such condition is due to the colony having been queenless for a while, as the bees may continue to harvest pollen when they cannot use it, since they have no brood.

It often happens that a time of pollen dearth comes, when one may be very glad to find those combs to keep the bees breeding. But the pollen must be dry and in good shape. If it has become mouldy, it is of no value.

Some people advise to soak the combs in water until the pollen is thoroughly wet; then take them out and allow the combs to dry, when the pollen will shrink to such an extent that it may be shaken out. I have never tried it myself, having always found colonies that needed the pollen and could use it. But it looks reasonable, and I would recommend that you try it.

DUSTING FRUIT BLOSSOMS

I have 25 colonies of bees. There is a large orchard next to my property and the owner of this orchard informs me he is going to "dust" this year.

Will this kill my bees? Is it practicable to close the hives during the days the dust is put on? What result would this have on the bees and the honey crop?
NEW YORK.

If your neighbor is well posted, he is as much interested as you are in saving the bees. Besides, he knows that "dusting" or "spraying" during the bloom is injurious to the bloom. Therefore he will not "dust" at any time when there will be danger for the bees, for the bees are indispensable in fertilizing the bloom. See the article on page 70 of our February number.

If he is not well posted and if he thinks the bees are a danger to his orchard, as a few men still believe who never attend horticulturist meetings, it would do you no good to try to protect your bees by closing the hives, unless the weather was cool enough so they would not fret.

ATTENTION! MR. BEEKEEPER—

—EQUIP YOUR HIVES WITH—

HEIM BEE VENTILATORS

this season, and a larger honey production assured. Keeps new comb in the hive from melting down; makes active bees. Entirely eliminates bees from robbing from each other. Less swarms.

Place your order now.

Write for free booklet.

HEIM BEE VENTILATOR CO., Three Rivers, Texas

Pure Mating Guaranteed

We guarantee all our queens to be purely mated. Why not get the best? A trial order will convince you and add your name to our long list of satisfied customers.

Queens, 1 to 9, $1.25; 10 to 24, $1.15; 25 to 50, $1.00.

Two-pound packages with queen, 1 to 9, $5.00; 10 to 24, $4.75.

VALLEY BEE & HONEY CO. BOX 783 Weslaco, Texas

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Three-band Italians with select untested queens. Our strain is bred for business, and is giving good results in every honey-producing district of the United States and Canada. Hundreds of packages already booked for spring shipment. Safe arrival and absolute satisfaction guaranteed on every package and queen shipped.

Ten per cent will book your order. Write for full particulars and prices.

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Our motto is: "SATISFACTION GUARANTEED or Money Refunded."

It will pay you to let us quote you on your requirements before placing your orders.

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A. H. RUSCH & SON COMPANY
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CYPRESS
"THE WOOD ETERNAL"

We manufacture the finest CYPRESS HIVES and carry in stock a full line of supplies. Our prices are lower.

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Golden Queens and Banded Bees

Untested queens.....$1.00 each
Tested queens.....$1.50 each
Bees.....$1.50 per lb.
Nucleus.....$1.50 per frame
Bees inspected; free from disease.

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Valdosta, Ga.

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Lewis "Beeware," Dadant's Wired Foundation, Woodman Smokers. Cans and Glass Honey Containers Write for Catalog.
Service. Quality.

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BEE ESCAPE SAVES HONEY TIME MONEY

For sale by all dealers.
If no dealer, write factory.

R. & E. C. PORTER, Mfrs.,
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(Mention Am. Bee Journal when writing).

BOOKING ORDERS
for high-grade three-banded Italian bees and queens; 2-lb. package with select untested queen, $4.50; discount on quantity. Select untested, $1.00, $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each.
J. ALLEN, Catherine, Alabama

Geo. L. Emerson

MANUFACTURER BEE SUPPLIES
of quality. Western buyers can save by asking for quotations.

428-30 So. Hewitt St.,
LOS ANGELES, CALIF.

THE BEEKEEPERS LOOKOUT

PERFUMERY PLUS

The skunk is a fine example of the value of a reputation. Few people take the trouble to form a personal acquaintance with him, but judge him entirely by the general report. The skunk is one of the friendliest of our small animals and if it were not for the intolerable odor, he would be popular as a pet. I have known of cases where, when taken quite young and raised with the house cat, one has remained about the premises for months at a time without the slightest evidence of the foul smell. When some disturbance did arouse the little animal to the use of this peculiar safeguard, it was unpleasant for everybody concerned. The sickest dog I ever saw was one which took hold of a skunk without due regard to the point of contact.

Since the natural and preferred food of the skunk is mice and insects his presence is likely to be disastrous to the beekeeper. Once he learns that by scratching at the entrance of the hive he can induce the bees to come running out, he provides himself with a satisfactory meal with a minimum of effort. Occasionally one will form the poultry-killing habit and bring misfortune to the hen roost.

In the open field, however, away from bees and hens, he renders a valuable service in the destruction of mice, grasshoppers, beetles and other insect pests quite out of line with his usual reputation.—F. C. P.

California Bee Thieves Caught

A recent clipping, sent to us by Inspector Elmer Mathews, at Upland, Calif., brings the news that the bee thieves who have been raiding the bee yards of southern California beekeepers, have been "smoked" out. The clipping is as follows:

"Breaking up of an organized ring which is believed responsible for wholesale raids on apiaries throughout Southern California in recent months, was seen today by local beekeepers with the arrest in Porterville of R. D. Lemond and James Scroley as a result of the activities of Elmer Matthews, of Upland, San Bernardino County Bee Inspector.

"Lemond and Scroley, who are held in jail on grand larceny charges in default of $1,000 bail each, were arrested after Harry Weber, Rialto beekeeper, who accompanied Inspector Matthews north, had identified thirty-one hives in the possession of the pair as being part of a lot of forty hives which were stolen from his apiary last week.

"In addition to the hives claimed by Weber, two Tulare bee men are reported to have identified parts of their equipment at the Porterville plant of the pair.

"The activities of Lemond and Scroley in and about San Benardino County are said to have excited the suspicions of Inspector Matthews and others for some time, and when it was learned that they had suddenly departed for Porterville simultaneously with the disappearance of Weber's bees, the Upland man decided upon an immediate investigation.

"When taken into custody the two men are said to have been engaged in melting up wax, which has a market value of 38 cents a pound and which is said to run from four to five pounds to the hive.

"Arresting officers express the belief that Lemond and Stroley are old hands at the game, since there was abundant evidence that great effort had been made to destroy all marks of identification.

"L. L. Andrews, pioneer Riverside beekeeper, recently reported the theft of 1,800 wax combs from his warehouse, and numerous other apiarists hereabouts have recently reported raids on their plants.

"Weber values his forty stolen hives at $350. It is expected to connect up many of these thefts with Lemond and Scroley, who, it is believed, will be returned to this county to face trial."

Honey Scotch

Our good friend and honey producer and seller, Mr. Dumas, of southern France, writes:

"On page 18 of the January number, Mr. Collins tells you that the mixing and cooking of honey for the manufacture of "Honey Scotch" is a trade secret. I say it is an open secret and there are not many ways of doing it. The true secret consists in getting as much and as strong-flavored honey as you can in the candy. My honey confections sell at a big price, as the aromatic flavor of the honey is retained in them.

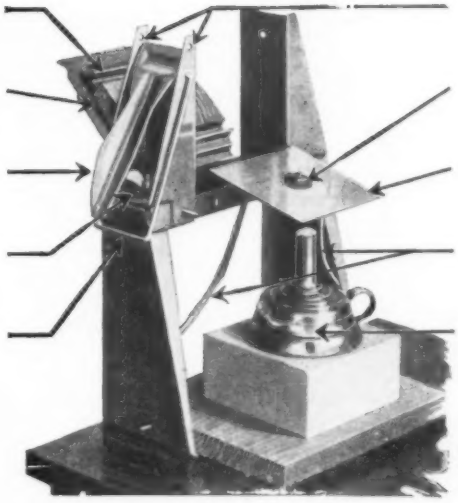
T-SHAPED FORM BLOCK
The sharp edge of hot plate slides under T-tin when cutting off foundation.

SLIDE SPRING ON FORM BLOCK
Holds section securely on the block while it is being reversed.

HAND LEVER
Which quickly fastens dovetails of section.

THUMB ADJUSTING NUT
Permits lever post to be moved backward and forward for sections of different sizes.

TRUSS WIRE
May be swung over opposite post when fastening dovetails if desired.



ADJUSTABLE LEVER
These holes in frame permit raising for use with taller sections.

HOT PLATE NUT
Permits hot plate to be tilted at just the right angle.

HOT PLATE
Melts edges of foundation, then cuts large piece off to make smaller bottom starter.

WIRES SUPPORTING HOT PLATE
Permits it to move to and from the form block.

ALCOHOL LAMP
Hot plate tilts over lamp when not in use, permitting surplus wax to run off back edge.

SIMPLE, SURE, SPEEDY

You cannot afford to be without the **Woodman** combined section press and foundation fastener. It folds comb honey sections and fastens top and bottom foundation starters at one handling at a great saving in time and money.

Fastest Fixer Made. The WOODMAN Fixer is a very fast machine. With a little experience you can easily handle 100 to 200 sections an hour, setting both top and bottom starters. One of our men's regular gait is to fold and put top starters into 500 sections in 90 minutes. This includes cutting of foundation and packing away the sections. With the machine, a slow and disagreeable job becomes very easy and simple.

Delivers Right Side Up. The WOODMAN Section Fixer is the only machine from which the section comes away right side up, with the large starter hanging down. They do not become loosened in reversing as with other machines.

More Money for Your Honey. Because with top and bottom starters you are assured of straight combs well attached to all four sides —a requirement to grade fancy. The hot plate fastens both top and bottom starters securely.

Easy to Use. Since you are always handling large pieces of foundation, the WOODMAN Fixer is much more easily used than any other machine. By ordinary means, only an expert can set the small starter at all, but with the WOODMAN this is accomplished very easily and quickly.

Hundreds Sold. The WOODMAN Fixer is the most successful and popular machine on the market. Every buyer is enthusiastic. Adjusts quickly to handle different size sections. If you have but ten swarms you cannot afford to do without it.

A postal brings full information and price. Our complete catalog of beekeepers' supplies and accessories free for the asking. Write for it.

For sale by all G. B. Lewis Co. and Dadant & Sons agencies. Also sold by many others in this and foreign countries. Price, with lamp, $5.70 Mailing weight 5 pounds. Postage extra.

A. G. WOODMAN COMPANY

SOLE MANUFACTURERS

204 SCRIBNER AVE., N. W., GRAND RAPIDS, MICH.

WOODMAN'S FAMOUS BEE-WARE

WOODMAN'S

SECTION FIXER

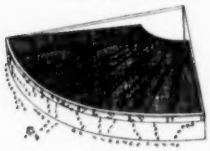
CARNIOLANS

are very gentle, very prolific at all times, excellent winterers, build up rapidly during the changing weather of the spring months, and are most excellent workers; 1925 average over 150 pounds extracted per colony. Ask for my free paper, "MERITS OF THE CARNIOLAN BEE."

Queens ready latter part of next month; 20 years' experience with Carniolans; also Jan Strgar and M. Ambrozic imported strains. A few 2-lb. packages and 8-fr. colonies yet. Ask for prices.

ALBERT G. HANN,
Glen Gardner, New Jersey

THE NEW ROBINSON FEEDER



Most natural and profitable feeder. Insures over 300 square inches feeding space. Insures strong colonies from weak ones and from package bees. Particulars.

THE ROBINSON MFG. CO.,
Box 94 Morton Grove, Ill.

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can save money by ordering Lewis BEEWARE and Dadant's Foundation from us. Write for illustrated price list. We buy beeswax.

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KANSAS BEEKEEPERS

Lewis Beeware, Dadant's Wired Foundation at catalog prices.

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The Dadant System of Beekeeping

By C. P. Dadant

The Dadant way of keeping bees explained, including the important points in the use of the large hive.

The author gives an account of his long practice and describes the many experiments made by Charles Dadant and his descendants in the Dadant Apiaries.

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PRICE $1.00, POSTPAID
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AMERICAN BEE JOURNAL, Hamilton, Ill.

Meetings and Events

Field Bee Culture Laboratory for Wyoming Probable in 1928

All three of the Congressmen from Wyoming have expressed themselves in favor of the Association's idea of a government field bee culture laboratory for the intermountain region, and each has taken the matter up with the U. S. Department of Agriculture. A letter to Congressman Winter from the Department is exceedingly encouraging and follows in full:

"Your letter of January 30, requesting the views of this Department concerning the proposed establishment of a field bee culture laboratory and also containing a resolution on the matter adopted by the Wyoming Beekeepers' Association, has been received.

"The intermountain and adjacent states constitute one of our most important honey-producing areas, and whenever the funds are available it would be desirable, in the opinion of the Department, to establish a field laboratory for the study of problems peculiar to that region and which could best and most economically be handled by a station which could conduct researches beneficial to all of the states concerned. Normal bee behavior is so greatly modified by climatic, physical, and floral factors in any region, as to render necessary a different type of apiary management in each. Exactly the proper methods to adopt in any general region, therefore, can only be determined after first-hand study and experiments carried on in the region involved. The Department is unable to establish such a station with the resources at present available, however, since these funds are devoted exclusively to several major projects which are of country-wide importance.

"Of the total annual production of 55,224,061 pounds of honey in this country, as reported by the United States census for 1920, 18,327,794 pounds, or practically one-third, was produced in the territory under consideration. The census figures, however, include only returns from farmers, while, on the other hand, a large proportion of the commercial honey producers live in towns and their bees or production of honey are not listed by the census reporters. The actual annual production in this country was estimated by this Department in 1918 as at least 150,000,000 pounds. Production since that date has increased and the gain has consisted to a large degree of increased production in the intermountain region and adjoining states.

"Heavy losses have been occasioned during the past few years due to lack of knowledge of how to solve successfully, under intermountain conditions, the problems for which aid is requested by the Wyoming beekeepers. Merely the wintering problem has caused an average annual loss estimated at 11 per cent of all colonies during winter for the past eleven years in the State of Wyoming, and there have been higher average winter losses in some neighboring states. The effects of bad wintering on the surviving colonies also have reduced colony strength and power to gather a maximum crop of honey. In Wyoming alone, the effects of poor wintering due to lack of proper knowledge on the part of the beekeeper have occasioned losses running into hundreds of thousands of pounds of honey annually. To this total loss must be added that caused by disease and various local conditions. It is our belief that these losses can be reduced to a negligible minimum if proper beekeeping methods are worked out.

"The annual sum of $10,000 mentioned in your letter, should prove sufficient at the present time to permit the work to be conducted on large enough scale to obtain results efficiently. This would involve the maintenance of apiaries in a sufficient number of localities to cover the whole range of natural conditions in that region. Two men, well trained in scientific apiculture, would need to be employed in beginning the work, one to devote his time to the special behavior of bees and the particular apiary management required in that region, and the other to make an exhaustive study of the nectar and pollen resources, and of the climatic and other natural conditions which have a bearing both on bee behavior and on nectar secretion and pollen yields in that locality. In addition, a certain amount of clerical help would be required in keeping records, and some ordinary labor would be necessary in connection with the apiaries."

—Wyoming Bee Line.

M. D. Farrar, Secretary of South Dakota Association, to Teach Beekeeping at Brookings

You will probably be interested in what South Dakota has been doing in the way of beekeeping during the past year.

Previous to July 1, 1925, there was no one directing the beekeeping of the state. I was appointed last year to carry on this work to stimulate the industry of the state.

The College at Brookings now has for instructive purposes two well equipped laboratories and a lecture room for beekeeping. The apiary is conveniently located near the laboratory and is available for student use and observation. The bees were wintered out-of-doors the past winter, packed in leaves, paper and planer shavings, and in two quadruple cases for the purpose of determining by a series of such experiments methods of outdoor wintering applicable to South Dakota conditions.

The beekeeping course in the College is proving popular, 25 students having enrolled in the courses during the past year. Through the Extension Service this summer a series of lectures and demonstrations has been outlined to be given over various parts of the state.

Beekeeping associations, both state and local, are awakening to the possibilities of South Dakota and demanding a revision of our present foulbrood laws. Beekeepers of the state are enthusiastic and I believe that another year will make South Dakota an outstanding state for beekeeping.

M. D. Farrar,
Instructor in Beekeeping and Secretary South Dakota Beekeepers' Association.

Report of Beekeeping Committee at Umatilla Project Conference

W. G. Rodda, Secretary of the Umatilla County Beekeepers' Association, at Hermiston, Ore., gives a lengthy report of the present conditions of beekeeping in that county, with recommendations for future work.

There are about 6,500 colonies of bees in the county, with an estimated present production of 250 tons of honey. There are 26,500 acres of

alfalfa in the county, and the two figures, that for bees and that for alfalfa, show just one colony to every four acres. It is the feeling of the committee that that project is at present overstocked with bees with no room for increase. With an estimated increase of 15,000 acres of alfalfa there would be room for not more than another 2,000 colonies without overcrowding; but this increased acreage will not be available for some years to come.

Bees Making History in Washington

According to a correspondent who writes from Shelton, Mason county, Wash., to the Tacoma Ledger, bee culture is one of the lines of endeavor that is marking the change of that county from a logging to an agricultural community. In an article of some length upon the agricultural industries of the county he says of bee culture:

"Bee culture is another sideline of growing importance, and in several instances, as with the Mountain Flower Honey Farm of the Misses Sater and Hoffman, near Lake Cushman, honey producing is the chief industry. Now that foulbrood has been found out and gotten under control, there is more interest being taken in bees and the tonnage of honey being marketed is a considerable item."

Utah President

At the annual convention of the Association in Salt Lake, J. C. Henager, of Salt Lake, was re-elected President of the Utah Beekeepers' Association for the tenth time. Mr. Henager has 45 swarms of bees at Bountiful which he tends as a hobby, claiming that he gets the same pleasure out of it that others get from golf.

Dan Hillman, State Bee Inspector, was re-elected Vice President, and F. B. Terriberry, of Heber City, Secretary-Treasurer. Other members of the Board of Directors are R. T. Reese, of Ogden, and Wilford Bellis-ton, of Nephi.

Statistics About Illinois Beekeeping

V. G. Milum, Apiculturist at the University of Illinois, is attempting to get full information concerning the present status of beekeeping in Illinois, including data about the honey plants of the state, their prevalence, time of bloom, and importance. Questionnaires have been sent to beekeepers and to the secretaries of the various associations. If everyone gives him full co-operation, the results will be of considerable value when published for the

THE FIRST COST IS THE LAST COST

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QUALITY AND SERVICE FIRST CONSIDERATION

There are many qualities that make the value in apiary equipment, but of all virtues the MATERIAL comes first. Our supplies are made of all

Tidewater Cypress
The Wood Eternal

Cut accurate. Dovetailed by skilled workmen. At a saving to you of 15%. The material and workmanship is guaranteed to please. May we send you one of our free illustrated catalogs?

ANDALUSIA MANUFACTURING CO.
ANDALUSIA, ALA,

BEES FREE DELIVERY

CITRONELLE Bees and Queens

Delivered at following prices with satisfaction guaranteed. We do not have heavy honeyflows here to wear bees out; have a slow, regular flow which enables us to supply good fresh young bees that will harvest the crop for you.

PACKAGE BEES

Select untested queens furnished with package bees. Add 25c to each package if wanted by mail.
Remember we pay all delivery charges when comparing prices.

Quantity	1 to 10	10 to 50	50 to 100
2-lb. packages	$4.25	$4.00	$3.80
3-lb. packages	5.25	5.00	4.80

QUEENS

Quantity	1	12	50	100	500	1,000
Select untested	$1.20	$11.00	$44.00	$85.00	$400.00	$750.00
Untested queens	1.00	10.00	40.00	75.00	370.00	730.00
Tested queens	1.50	17.00	70.00			

Tested breeders, $5.00 to $25.00 each

CITRONELLE APIARIES, Citronelle, Ala.

DON'T Go thru another season without trying the "HEIM BEE VENTILATORS." Contented bees, less swarming, less danger of robbing each other, and a larger honey production. A trial order of six will convince you of these facts.

Booklet on Request

Heim Bee Ventilator Co.
Three Rivers, Texas

GOLDEN ITALIAN QUEENS BRED FOR BUSINESS

Only one grade select. Safe arrival and satisfaction guaranteed.
Untested, 1, $1.25; 12, $12.00. Tested, $2.50 each.
1-lb. pkg. of bees and untested queens, $3.00; 2 lbs., $5.00.
All mail charges paid.

E. A. SIMMONS - - - GREENVILLE, ALABAMA

use of Illinois beekeepers. Illinois beekeepers take note and do your best.

Honey Importations from Porto Rico

The "Revista De Agricultura de Puerto Rico" states that during the fiscal years 1924 and 1925, Porto Rico shipped to the United States 59,500 pounds of beeswax and 4,970,000 pounds of honey. We may consider this as wealth, since Porto Rico is one of our possessions, or as a curse, as their honey competes with our own.

The same magazine tells us that the consumption of bananas in the United States from the West Indies, in 1923, was to the value of twenty million dollars.

Mail Course on Beekeeping

Beekeeping is recognized as one of the important features of agricultural education by the Ohio State University when it lists it among the twenty-four mail courses prepared for the winter season. Members of the faculty of the state agricultural college are the authors of the lessons; each course containing from three to fourteen lessons, with questions following each lesson.

The Idaho Law on Importation

SOME beekeepers object to the Idaho law, mentioned on page 115, forbidding the importation into that state of bees on combs. In explanation of the reason for the passage of this law, Mr. W. L. Clark, of Jerome, writes:

By the practice of permitting beekeepers of other states to bring their migratory apiaries into southern Idaho, as that is the section principally covered, during the honeyflow season, the Idaho beekeepers were forced to defend themselves against what was considered unfair competition and methods detrimental to the best interests of the state beekeepers. Foulbrood was introduced into Idaho from outside colonies; carloads of bees were shipped in from hotter-than-Idaho climates, to be kept in Idaho only during the honeyflow season; these migratory apiaries also avoided taxation in Idaho through existing conditions, and, moreover, reduced the available supply of nectar for the regular and permanent apiaries of Idaho beekeepers.

After the honeyflow in Idaho ceased, these carloads of bees were removed to the southern climates of California and Arizona, to work on the sage and orange blossoms, leaving behind, in Idaho, the diseased colonies, which scattered disease among the healthy colonies of Idaho. The Idaho state law, demanding that diseased colonies be destroyed, burned, or cleaned up thoroughly, was not heeded nor obeyed. Consequently Idaho beekeepers made concerted efforts for protection of their own apiaries from disease brought in by the migratory bees, with the result that the State Department of Agriculture has issued the protective order.

Of course, it is recognized that migratory owners of bees were simply seeking to take advantage of the splendid opportunity offered by sunny southern Idaho during its summer season, as heavy producing fields of alfalfa and sweet clover offered an alluring proposition to beekeepers hard to reject. Consciously or unconsciously, migratory beekeepers were unmindful of the best interests of their fellow beekeepers in Idaho. It is not presumed that same was done intentionally.

Had the state law regarding the disposition of foulbrood been heeded and obeyed, perhaps pressure for relief from migratory apiaries would not have been so stressed as to bring about the ban on migratory bees. It will be noted from the Department order that bees may still be brought into Idaho, but certain strict requirements intended to prevent the spread of disease and to afford protection properly to healthy colonies must be rigidly adhered to and met.

One also wonders if it is entirely fair and reasonable for Idaho beekeepers to sustain all the taxation on bees within the state, while migratory apiary owners remain free from all taxation, but at the same time securing freely of the nectar resources of the state which are produced by the work of Idaho farmers and beekeepers. Would it not be considered reasonable, when migratory apiaries produce from Idaho nectar, honey, which is a marketable product and has a marketable value, that they should to some extent sustain a tax on bees as state beekeepers do, and thus relieve Idaho beekeepers of part of the taxation the same as they relieve them of part of the honey-producing nectar?

The woman and the bee are alike. The bee dips into the flower to gather honey. The woman dips into your heart and gets love.

ACHORD BEES AND QUEENS

The Best of Pure Three-Banded Italians

Shipments start April 20th.

2-lb. package with select young laying queen	$ 4.75
Five 2-lb. packages	22.50
Twenty-five 2-lb. packages	112.50
3-lb. package with select young laying queen	5.75
Five 3-lb. packages	27.50
Twenty-five 3-lb packages	137.50

If packages are wanted without queens, deduct $1.00 from the price of each package. Inspection certificate and all necessary papers to carry packages through without delay. Safe arrival guaranteed. Express charges collect at destination, or if shipped by parcel post, postage will be added to invoice.

QUEENS

Select young laying queens $1.00 each, any number. Tested queens $1.75 each, any number.

No bees or queens sent C. O. D. Producing package bees and queens has been our sole business for many years. We have passed that costly and dangerous experimental stage. Your order placed here brings highest value for the money invested. Write for complete information.

W. D. ACHORD, Fitzpatrick, Ala.

Practical Queen-Rearing

By Frank C. Pellett.

Queen-rearing Principles made clear. 105 pages, 40 illustrations.

Price $1.00, postpaid.

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Every ounce of this re-processed Water

FORMALIN SOLUTION

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For sterilizing combs infected with **AMERICAN FOULBROOD** *it is the Cheapest Dependable Disinfectant.*

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Satisfaction Guaranteed.
No deposit.
Booking orders now.
$2.50 each. Queens $1.00.

Ohmert & Son, Dubuque, Iowa

A Little, Fun, Now and Then

We have to laugh, so will you, at the following, sent in to us from British Columbia, by a good friend. It is clipped from the Vancouver Daily Province:

REGULATING BEES

By F. L. Luce.

A by-law to regulate the movement of bees in Richmond is under consideration by the Municipal Council. None too soon either. Richmond bees have been permitted a liberty which at times has developed into license, and many farmers have adopted an humble, not to say servile, attitude in the presence of the hectoring insects.

For years bees have been flying recklessly over tilled fields and rough pastures, heedless of the damage they might cause to orchard trees or standing timber. They have done this deliberately and with malice aforethought, for the bee is an intelligent insect, and her disregard of the comfort, convenience, and vested rights of Man must be construed as a studied insult.

All that is to be changed. Henceforth bees will be held to strict accountability for their deeds and misdeeds. Punishment, swift and fitting, will be visited upon every individual guilty of breaking the clauses of the Bee Movements By-law and amendments thereto, should such become necessary.

Rather than print the regulations in full I prefer to indicate their wide scope by the following detached clauses, which I have gotten out of the by-law with the help of a honey extractor.

All bees, male, female or neutral, but more particularly the latter, seeking permanent residence in Richmond, must be possessed of certificates of good health, which shall be produced on demand.

Bees subject to fits, pip, dandruff, hangnails, pyorrhoea or halitosis, will be rigidly excluded, even if otherwise in good health.

Except in an emergency, bees must fly due north, south, east or west. Flying northwest by west is strictly prohibited at all times, by request of the Canada Air Board.

Bees must pass to the right of each other on aerial lanes. There are no restrictions when traveling on foot, though overcrowding should be avoided.

Flying sideways, backwards, or upside down will not be tolerated.

There must be no swarming without the written permission of the municipal clerk.

When approaching a human being, a bee shall give due notice of its

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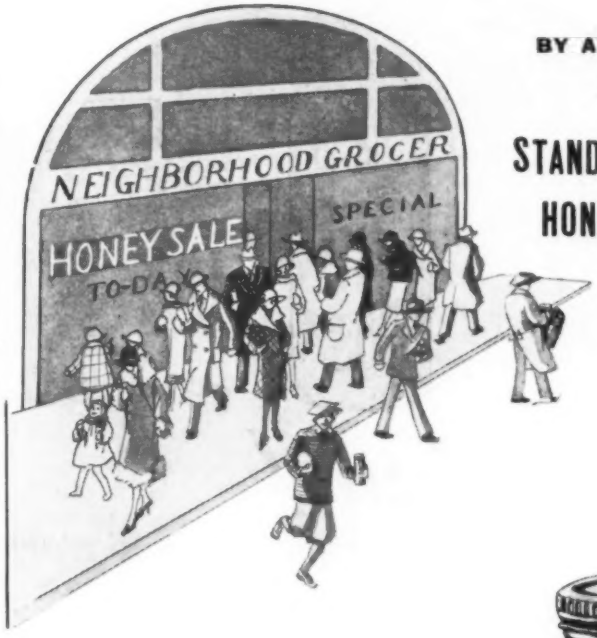

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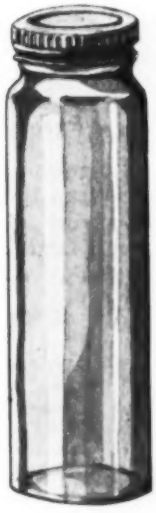

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THe Honeybee A Complete Text on Beekeepieg

By Langstroth and Dadant

In English, "The Honeybee"; in French, "L'Abeille et la Ruch"; in Spanish, "La Abeja Y La Colmena." 450 pages. Over 200 engravings. Cloth binding Price $2.50

This book was written by L. L. Langstroth, the Father of modern beekeeping and originator of the movable frame hive. His work forms the basis for our present beekeeping methods.

Later Langstroth entrusted his book to Charles Dadant for revision and publication. It is now edited by C. P. Dadant. It has been revised several times, being now in the 22nd edition.

AMERICAN BEE JOURNAL, Hamilton, Illinois

'Ten-Shun!

Put this profit making army to work

SHINING ranks of sparkling fluted honey jars, filled with your honey, make an attention getting display which will cause even casual shoppers to say, "That Honey looks mighty good—give me a jar."

"Diamond I" Honey Jars, which have been adopted by the American Honey Producers' League as standard, come packed in corrugated fibre cases which you can conveniently use for reshipping the packed honey to your trade. There are 2 dozen of the ½- or 1-lb. jars, or 1 dozen of the 2-lb. jars in each case.

Any of the houses listed below can supply you.

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Established 1873

ALTON ILLINOIS

SEND YOUR RUSH ORDERS

for package bees and queens to Geo. A. Hummer & Son, reliable dealers, reliable bees, reliable prices.

PRICES—QUEENS

1 to 10, $1.10 each; 10 to 25, $1.00 each; 25 to 50, 90c each.

PACKAGES

2-lb. and untested queen, 1 to 25, $3.50; 25 or more, $3.00.
3-lb. and untested queens, 1 to 25, $4.50; 25 or more, $4.00.

NUCLEI

2-frame and untested queen, 1 to 25, $4.50.
3-frame and untested queen, 1 to 25, $5.50.
More than 25, deduct 50c each.

Terms: 10 per cent to book, balance prior to shipping bees.
F. O. B. Macon, Miss.

GEO. A. HUMMER & SON, PRAIRIE POINT, MISSISSIPPI

presence by buzzing forcibly from a distance of ten yards.

In case of a bee meeting a pedestrian on a narrow road, the pedestrian has the right of way.

Except for cause, or when in dire need of amusement, no bee shall sting a registered voter.

Puncturing a resident whose name is not on the voters' list shall be deemed a minor offense, but any bee making a practice of this shall be deemed a public nuisance, and dealt with accordingly.

The poundkeeper is hereby authorized to impound any bee found roaming at large in summer between the hours of 8 p. m. and 3 a. m., Daylight Saving time. The said poundmaster shall use his own discretion as to whether he shall capture the bees in a net, basket or Mason jar, or whether he shall hypnotize them into following him to the pound. No unnecessary cruelty will be tolerated, but obstreperous bees will be sharply reprimanded.

Farmers who have suffered from the depredations of bees will have the privilege of erecting boards giving notice that the gathering of nectar or pollen in their fields is strictly prohibited. The warning must be in letters large enough to be seen by a small bee with weak eyes, and the fields must be made bee-proof, insofar as possible. No farmer is empowered to visit his wrath upon any bee which may stray into his fields, but the trespassing insect may be detained and turned over to the municipal authorities for correction.

Bees breaking any of the minor clauses of this by-law will thereby incur the severe displeasure of the reeve and council.

Bees breaking any of the major clauses will, upon identification and conviction, be confined in their own cells for a period of six months, the sentence to commence on the first day of winter as officially recognized by the bees.

Nothing in this Bee Movements law shall be construed as in any way restricting or limiting the activities of the Queen Bee. The reeve and councillors, in their wisdom, recognize that the Queen can do no wrong.

Largest Crop In a Day

W. D. Wright, Souris, Manitoba, reports a crop of 25 pounds in one day, July 31, 1925, vouched for by the Provincial Department of Agriculture. (Irma, Manitoba Times, Dec. 18, 1925).

The long days of those northern countries enable the bees to harvest much honey in a short time.

Soil For Sainfoin

Sainfoin exists in two varieties; Hedysarum Onobrychis can be cut only once while Hedysarum Onobrychis biferum can be cut twice a year.

Both are bee fodder plants par excellence. The name Sainfoin, according to Webster, comes from the French sain, wholesome, and foin, hay. This gives an estimation of the value as a fodder for stock. While clover, alfalfa, etc., as green foods generally, but sometimes also as young hay, cause very often tympanites, bloating, sainfoin never does.

But sainfoin will not grow "in any soil" that grows alfalfa or clover well; it needs a **large** surplus of lime in the soil. A soil, for instance, which will not grow cherries very well on account of being too limy is very well suited for sainfoin. In such soil the yield of the one-cut sainfoin will be as high as four to five tons.

Apparently sainfoin is of French origin; the English name sainfoin, as well as the German name, esparsette, are doubtless of French origin.

In both countries I have seen it sown in winter wheat or winter rye.

On the whole, I can cheerfully recommend it as a good stock food and as a splendid honey plant, but only under the condition that the soil is over limed.

H. V. Costenoble, Farm Adviser,
Philippine Islands.

Who Will Publish?

Under the heading "Government Reports that Trade Associations May Publish," Printers' Ink goes on to explain that owing to deficiency in the appropriation for printing of the Department of Commerce " . . . about 125 official reports (of that department) will not be published until the next fiscal year, if at all, unless their publication is taken over by representative commercial organizations." It enumerates a number of market reports that will fail to get printed unless the printing of them is taken over by these organizations, and adds: "In addition to these, the Foodstuffs Division is preparing a series of reports on the domestic trade in walnuts, peanuts, **honey** and molasses. These four reports will contain about forty pages each, and there is no prospect of Government publication within the year. . . .

"These, and numerous other government documents are available for publication by responsible and recognized trade associations and other commercial organizations."

—NEBRASKA BEEKEEPERS—

You can get Root goods quickly, from these points:

GRISWOLD SEED COMPANY -- LINCOLN | J. R. BUDLER ---------- HAMPTON
CARHART LBR. COMPANY ---- WAYNE | ROSENBERG COMPANY --- LEXINGTON
TURNER & SONS ---------- RED CLOUD | R. W WALLACE ---------- OVERTON
THE CONSERVATORY--OSHKOSH

THE A. I. ROOT CO. OF IOWA, Council Bluffs, Ia.

QUEENS WE CAN FILL YOUR ORDERS NOT YET BOOKED FULL PACKAGE BEES

We are enlarging and improving our apiaries and have purchased the entire equipment and apiary of M. G. Ward and also the apiary of A. W. Lee, and can take care of your orders.

We have carefully selected as our breeding stock the best and most prolific queens. We produce our queens under normal conditions in well-filled standard nuclei. They will make you money. Either Italians or Carniolans with any amount of package bees at the following prices:

Select untested queens, $1.25 each; 10 or more, $1.00 each

Package bees, $2.50 per two-pound package

Write for booklet based on 16 years experience with bees

FRANK & ST. JOHN
RIPON, CALIF.

Special prices on large orders

SEASON 1926

Pacific Citrus Honey Company

Office 221 Chancery Building, 564 Market St., San Francisco, Calif.

Apiary at Woodlake, Tulare County, Calif.

Prices for April

QUEENS—Three-banded Italians

1 mated, untested, $1.00; 6 for $5.50; 7 to 15, 80c each; 16 to 50, 75c each. Over 50, 70c.

PACKAGE BEES

In two-pound packages only.

1 to 10, $2.50; with queens introduced, at $3.50
10 to 100, $1.85; with queens introduced, at $2.60

Package bees are shipped in extra large two-pound cages. Large orders will be given a lower quotation.

Terms: 10 per cent with order, balance before shipment.

Queens

Berry's Reliable Three-Band Italians Ready for Shipment by Return Mail

Save that queenless colony. All our queens reared from great record breakers and record makers.

Untested, $1.00 each. Lots of a dozen, 90c each

We guarantee prompt shipments and that all queens will arrive in perfect condition.

M. C. BERRY & CO., Montgomery, Alabama
Box 697

FOR QUICK SERVICE
AND
CHEAP TRANSPORTATION
VIA
MAIL, TRACTION OR FREIGHT
INDIANA AND OHIO

Beekeepers—Send your orders for **Lewis Beeware** and **Dadant Foundation** to

THE BROCK STORE
138 NORTH SECOND STREET
DECATUR, INDIANA

Carlot Distributor

—QUEENS OF—
Moore's Strain
OF ITALIANS PRODUCE WORKERS
That fill the supers quick
With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.
Untested queens, $1.00; 6, $5.00; 12, $9.00. Select untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, QUEEN BREEDER,
Route 1, Morgan, Kentucky.

MISSOURI BEEKEEPERS

Will find us ready, not only to serve their supply and foundation needs, but ready to help them carry on their problems.

If in trouble, write us.

DADANT & SONS, HAMILTON, ILLINOIS

There is a Lewis-Dadant Dealer Near You

STOP! THINK!

Did it ever occur to you that it took expensive advertising to sell poor queens

Good queens advertise themselves. We have them. Carniolans, $1.25; Italians, Goldens, $1.00, $11.00 per dozen. Twenty-six years' experience. Safe delivery guaranteed.
The Russell hives are crowded and the Russell hives are jammed.
The bees that fill the supers are from the F. M. Russell strain.

THE F. M. RUSSELL CO.,
Roxbury, Ohio.

We Amateurs—

By Fremont Conrad.

AFTER reading Mr. Crane's article in the January issue entitled "If You Were to Begin Over Again," and trying to absorb the wisdom and philosophy in it, I could not at the same time help but note the absence of anything definite in the form of rules or instructions which we amateur beekeepers try so eagerly and faithfully and hopelessly to carry out.

I say hopelessly from my own experience, for as much as we desire to have everything all planned out for us in a never-failing system, our poor mistreated bees never fulfill our fond expectations.

I have been playing around with three or four colonies for three years now and I believe I am able to really appreciate Mr. Crane's article. I fear that I, in my first year, or any other beginner when just starting in, would not have gone back again to read it over for a second or third time as I have done.

After handling and studying bees for two or three years we begin to see and understand the principles underlying the instructions we have been trying to carry out. Bees are human. They're intelligent.

I did a lot of reading and studying and, as Mr. Crane says, you really can glean an immense amount of information from the bee literature we have today. That written especially for beginners appeals to us most.

Looking back, I wonder that I did not become completely confused after considering the earnestness with which the two leading bee supply firms advocated their methods and equipment. Living near Milwaukee, Wis., I naturally got more Lewis dope than Root, and as many of the beekeepers around me were under the same influence, I found it easy to stick to one system.

You probably don't realize, or the bee supply people don't realize, what a tremendous influence a catalog of beekeepers' supplies can have on a beginner. The more information these catalogs have pertaining to the management of bees, the more study will be devoted to it.

It's true we want our thinking done for us; we want others to tell us what to do and when to do it. We want your schedule all cut and dried. I deny that we are incapable of thinking for ourselves; we don't get down to the principle of the thing. We should ask "why" sometimes, and some of you would be at a loss to explain or give reasons for some of the things you do or use.

The beginner usually hasn't confidence in himself; while you too often find the opposite state of mind. We think we know all about it and go ahead and do untold damage by ruthlessly subjecting our bees to some freak, distorted notion that gets into our heads after misunderstanding some well-meant advice or inadequate rule.

"Study well the bees," says Mr. Crane, and that is the secret in a nutshell. Many were the repriman is I got for neglecting my work on the farm, while in the orchard, too long after dinner, lying flat on the grass beside a hive watching them work. I had one young colony which I could open without smoke or a veil. It was fun to take out a comb and watch them deposit their honey; watch the queen, etc. After a while they would become restless and I soon learned that that was the psychological moment to put them back. All these things are wonderfully interesting.

One source of information often open to a beginner is from older beekeepers in his neighborhood. When I stop to think how we bother these worthy gentlemen with our silly questions and petty cares, just at the time they're so busy that they don't know which way to turn next, I don't wonder a bit that some of them become impatient with us.

As a group, they are all splendid, open-minded fellows, willing to tell you all they know. I have found some, however, with the attitude that every amateur starting in the bee business will provide competition for them in the honey market.

Some say we will hurt the market by putting out inferior grades of honey that will turn people against honey. We will undersell the big producers, because our production costs are lower, or we think they are. We will start an epidemic of foulbrood in supposedly (?) clean areas.

Some of this may be only too true, I fear, but even at that it is an altogether too near-sighted and even pessimistic view of the situation. It will be a long time before we produce enough honey to have the slightest effect on the honey market one way or another.

Just what is the relation of the amateur to the future of the bee industry? What effect will he have on the future honey consumption of the people and the supply and demand? ,

I believe the amateurs in any industry, no matter what it is, are the real backbone of that industry. They are the foundation and the future development rests with them.

They will be the best advertisers you can get, and believe me, honey

needs advertising in this country today. As long as there is any Karo or so-called "home-made" jellies sold in our grocery stores, we will never have any rest. But people don't know that they are practically worthless compared to what they could get for the same money if they bought honey.

After we get our consuming public to eat honey and to appreciate its food value, we will never be able to supply the demand. The bee supply people should realize that their business in the future depends on the future honey consumption. Couldn't they do some indirect advertising? We are all depending on this one vital thing. The supply may vary from year to year according to the seasons, but the demand should always increase. Let us help you.

Wisconsin.

California Honey Fruit Centers

According to Western Confectioner, "The National Nut Company of California, importers, wholesalers and manufacturers of edible nuts and nut products, recently ventured into a new field of activity, and has taken over the manufacture of a new line, 'California Honey Fruit Centers,' for the use of the candy manufacturing trade. 'California Honey Fruit' and the honey fruit centers are the invention of Charles Heilbonner, of Oakland, who has spent years in experimenting and perfecting processes whereby apples, honey and almost any other kind of fruit are combined, without sugar, into tasty and healthful confections. The new line of centers being offered to the trade includes apple honey, apple orange honey, apple lemon honey, apple fig honey, apple pineapple honey, apple honey walnuts, apple honey pine nuts, put out in sheets to be cut up and coated as desired."

Honey On "Servatab" List

The Housewives Service League syndicates a shopping list—"Servatab"—for the convenience of housewives in buying, in which honey is listed under "Sugars and Syrups." Such a list is not only a convenience to the housewife, but it also suggests to her what to buy, and is therefore good advertising for the items listed, honey among the rest. And a big advertiser in Winnipeg goes a step further and places a square at the left of each item for convenience of using the pencil in checking them off. It is, as it were, the housewife's grocery ballot; and when you see that little square beside "Manitoba Honey," Manitoba honey is saying, in effect: "Vote for me."

"BOOKED-UP" NOTICE ON

PACKAGE BEES

Save yourself time and possible disappointment by not sending us further orders for delivery before June 1.

But if it is queens you want, let us hear from you. We are prepared to take care of you. For delivery after June 1, deduct 10 per cent from the prices listed below.

"OUR PRIDE" QUEENS

Untested, 1-10, $1.10; 11-25, $1.00; 26-50, 90c; 51-100, 80c; all upward 75c each. One grade of untested only, the best we know how to produce, and every one must be O. K. Tested, $1.50 each; breeders, $5.00. We guarantee pure mating of queens, safe arrival in good condition everything we ship, and freedom from disease. Health certificate with every shipment; also all other papers necessary to expedite delivery.

JENSEN'S APIARIES
CRAWFORD, MISS.

BEE WARE

Get Your Supplies Early
The Successful Apiarist

anticipates his requirements. We carry complete stocks. Langstroth Hives and Supers, Honey Extractors, Feeders, Comb Foundation (plain and Dadant's Wired), Queen and Drone Traps, Smokers, Honey Knives, Extractors, Storage Cans, etc. Special prices on large quantities.

Write or call for illustrated catalogue.

Steele-Briggs' Seed Co., Limited
Regina and Winnipeg.

Your order cannot be too small nor too large to get our personal attention and prompt shipment

When you order Leahy's Standard Bee Supplies from us there is no waiting. We are right on the job to give you the service that beekeepers demand.

If you are ready for the honey crop the bees will do their darndest

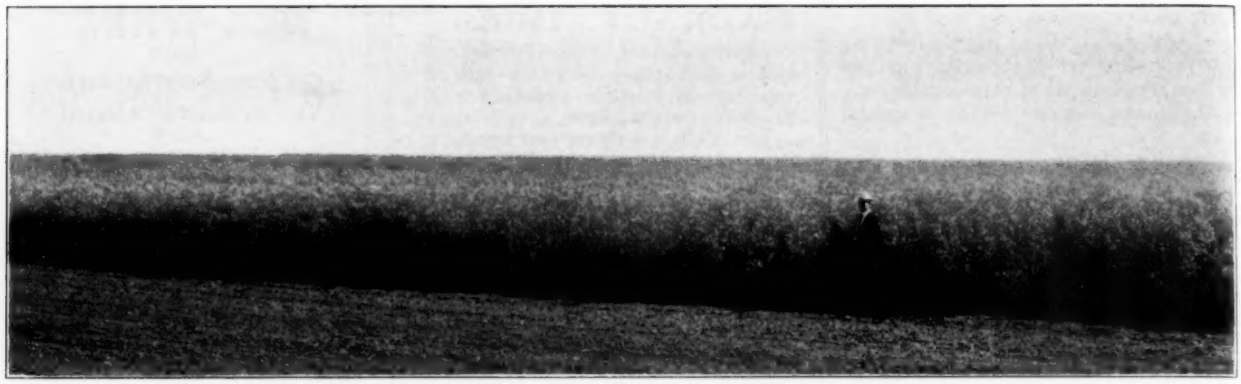
W. R. Perry Co.
1209 Howard Street OMAHA, NEBRASKA

"OUR CATALOG PRICES ARE LOW"

Bright American Beauty Italian Bees and Queens

Bright American Beauty Italian Bees and Queens. Two pounds, combless syrup feed, $4.00; 10 or more, $3.75. SPECIAL: 2 pounds bees shipped on frame, emerging brood, and honey queen, introduced and laying, $4.75; 10 or more, $4.50; 2½-pound combless package, $4.25; 10 or more, $4.00. Queens $1.00 each. After May 15 packages with late fall and early queens 75 cents less. State health certificate furnished. Satisfaction guaranteed.

TUPELO APIARIES, Apalachicola, Fla.
J L. MORGAN, Proprietor



IMMENSE ACREAGE OF SWEETCLOVER MAKES NORTH DAKOTA A

BEE PARADISE

North Dakota leads in the production of sweet clover seed. Acreage of sweet clover is increasing rapidly. Many farmers grow it for soil improvement alone; hundreds grow it for pasture and thousands of acres are grown for seed. Following is the acreage grown in 1925 in a group of eastern North Dakota counties:

GRAND FORKS COUNTY	27,053 Acres	RAMSEY COUNTY	24,782 Acres
CASS COUNTY	20,265 Acres	TOWNER COUNTY	16,280 Acres
NELSON COUNTY	16,312 Acres	PEMBINA COUNTY	15,120 Acres

Conditions in North Dakota are extremely favorable for bees; warm, sunny days and cool nights promote a large flow of nectar. It is claimed that honey production is as high as 200 pounds to the acre from sweet clover. North Dakota has a honey-producing season on sweet clover from June until October. Honey of the finest clear quality is produced. In the past five years beekeeping in North Dakota has increased 700 to 14,000 colonies. Bee authorities and experienced keepers predict that North Dakota will soon be one of the leading states in bees and honey.

Write for FREE BOOK on the agricultural resources of North Dakota and full information about LOW ROUND TRIP HOMESEEKERS EXCURSION RATES.

E. C. Leedy, Dept. J. { GREAT NORTHERN RAILWAY
St. Paul, Minnesota

ANYWHERE IN IOWA, NEB., S. D., KANS.

"BEEWARE"

IS DISTRIBUTED NEAR YOU

LOOK AT THIS MAP. WHAT DOES IT MEAN?

Nearly every beekeeper in Iowa, Nebraska, South Dakota and Kansas is within the third postal zone of Sioux City, Iowa. This **means rapid service and prompt answering of all inquiries.**

H. J. Pfiffner	Emmetsburg, Ia.
Harry A. Pease	Shenandoah, Ia.
D. L. Ginger	Langdon, Ia.
H. C. Jones	Marathon, Ia.
L. A. Michaelson	Holstein, Ia.
Bruns Seed Co.	Davenport, Ia.
Orville B. Rogers	Newell, Ia.
G. A. Ohmert & Son	Dubuque, Ia.
J. W. Bittenbender	Knoxville, Ia.
Hamilton Seed Co.	Cedar Rapids, Ia.
Bert A. Brown, Box 421	Des Moines, Ia.
Kennedy & Sons	**Lawrence, Kans.**
B. F. Ogg	Ottawa, Kans.
The Collins Apiaries, E. Sixth Ave.	Emporia, Kans.
Boyd Hardware Co.	Columbus, Nebr.
Farmers Supply Co.	Laurel, Nebr.
L. R. Dillard	Page, Nebr.
Gunn Seed Co.	Lincoln, Nebr.
Johnson Seed Co.	Grand Island, Nebr.
Kearney Hardware Co.	Kearney, Nebr.
Newton Hardware Co.	Orchard, Nebr.
Kuhl Bros.	Randolph, Nebr.
Hayes-Lucas Lbr. Co.	**Madison, S. D.**
E. I. Underwood	**Willow Lake, S. D.**
Lothrop's Nursery	Aberdeen, S. D.
Smith Hardware Co.	Sioux Falls, S. D.
A. F. Cunningham	Armour, S. D.
Dakota Honey Co.	Scotland, S. D.
N. M. Bratton Merc. Co.	Newell, S. D.
Gurney Seed Co.	Yankton, S. D.
F. D. Humbert	Grindstone, S. D.
R. H. Dunbar	Chamberlain, S. D.
W. S. Scott	Monroe, S. D.
M. W. Thompson	Toronto, S. D.
People's Flour and Feed Store	Mitchell, S. D.

(Names of carlot dealers shown in heavy type)

G. B. LEWIS COMPANY 1921 E. FOURTH STREET **SIOUX CITY, IOWA**

Could Honey Be Sampled To Mothers and Teachers

By Virginia Caldwell.

There was no honey on the menu of a "manufacturer's dinner" sponsored by the Parent-Teachers' Association of the Parker Practice School, that I attended recently at that school on the south side of Chicago. All the food for the dozens of tables, long ones, too, was supplied by manufacturers.

Because the parent-teacher movement has spread like wildfire over the country and in every community the mothers are constantly buying foods for their events, I am going to give honey producers a brief summary of this method of promoting foods.

I found this dinner interesting because of the class of homes represented. This school is one of three educational institutions whose joint campus sees 5,000 students a day, and is located in a prosperous community. The dinner was held in connection with a meeting to discuss a new junior high school building, proposed as an addition to the group.

The advertising took several angles. First, there was advertising in advance of the event. Tickets were sold by the women of the association. To these tickets were attached the menus, with the names of the contributing manufacturers, each in its proper course. These menus were torn off on the perforated lines and retained for use that evening.

Next was the display in the school lunch room, where the dinner was held. Around the walls were placed posters, car cards and framed pictures. Specimens of packages and containers were placed at the tables.

Souvenirs and printed literature made up another angle. This material was placed at the plates of the guests. There were books of recipes, place cards, cut-out novelties, paper napkins, postcards for sending for recipes, and other things.

The main form of advertising was the brief talk about each food, made by the dietist who arranged the dinner. She introduced each item, just when it was being served, telling something of its food value and about the methods of preparation and handling at the plant.

Package Bees

QUALITY — SERVICE
None better at any price.
Illustrated circular free.

VAN'S HONEY FARMS, Hebron, Indiana

Use Hutzelman's Solution

The best Disinfectant for American Foulbrood.
Now is the best time to disinfect combs for spring use.
For full information ask your dealer, or write to

DR. J. C. HUTZELMAN, Glendale, Ohio

(Patented October 14, 1924.)

Manufacturers of "Hercules" Non-Sagging Foundation

We are paying 43c per pound for clean beeswax in trade for bee supplies.
40c in cash. Ship today and notify us

Pearl and Walnut Sts. THE FRED W. MUTH CO. CINCINNATI, OHIO

BEES $1 A POUND IN LOTS OF 50 PACKAGES OR MORE

Select Queens Italians, Carniolans
Quality Satisfaction

OUR NORTHERN LOCATION makes it possible to save time and money.
Book your orders early and reserve shipping date. Circulars furnished upon request.

BANTA & WIRE, Redding, Calif.

A Delightful Gift

"Our Backdoor Neighbors"

By FRANK C. PELLETT

Stories that cannot be forgotten about the animal friends that live so close to us. There is nothing cut and dried about "Our Back Door Neighbors." It is a book so thoroughly enjoyable that it can be read repeatedly without tiring. Children love it, and the old folks love to read it to them.

210 pages—85 pictures from life—Cloth bound—Price $1.50.

AMERICAN BEE JOURNAL HAMILTON, ILLINOIS

ROOT SUPPLIES
ASSEMBLE BETTER
ARE THE MOST
DEPENDABLE
AND LAST LONGER

Root
QUALITY
BEE SUPPLIES

THE A. I. ROOT CO. OF IOWA
COUNCIL BLUFFS, IOWA

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

BEES AND QUEENS

MY QUEENS prove to be queens of quality, and still they cost you no more. Write for prices. R. V. Stearns, Brady, Texas.

TRY my Caucasian or Italian queens and be your own judge. Yards inspected lawfully for protection of diseases.
Peter Schaffhauser, Havelock. N. C.

BUY large packages, start with a full hive, or make two colonies with one package. One 4-lb., $5.10; five 4-lb., $25.00; ten 4-lb., $48.00; twenty-five 4-lb., $120.00. One 5-lb. with two frames, $6.40; five 5-lb., $30.50; ten 5-lb., $58.00; twenty-five 5-lb., $150.00. Standard frames. Prices include select untested queen with each package. Delivery guaranteed. Health certificate on shipment. Golden and Pure Three-Banded Italian bees. Fix your own shipping date.
Cloverland Apiary, Hamburg, La.

PACKAGE BEES—Immediate shipment. If you have ordered package bees and queens and received them several days or weeks after they were promised, and none too good quality at that, you can appreciate the value of real prompt service and the highest quality. The best quality and service are assured when you send your order to us. Why not pay a little more and avoid disappointment and loss? One 2-lb. package without queen, $3.50; one 3-lb. package without queen, $4.50, f. o. b. Montgomery. Untested queens $1.00 each. Write for descriptive circular and prices on quantities. Safe arrival and satisfaction guaranteed. Health certificate with each shipment.
J. M. Cutts & Son,
R. 1, Montgomery, Ala.

FOR SALE—Three-Banded Italian queens, after May 20, $1.00 each; six for $5.50; twelve for $10.00. Tested queens $2.00 each.
Robert B. Spicer,
Wharton, N. J.

I AM now filling orders for Golden Italian queens that are bred for business and gentleness as well as good color. State inspected, delivered safe. Satisfied customers everywhere. Untested, $1.05 each; six for $5.50; twelve or more, 80c each.
Hazel V. Bonkemeyer,
Randleman, N. C., R. 2.

1000 SCOTT QUEENS—In addition to the queens needed in our own yards we will raise 1000 of the same grade for our customers. We rear our own queens because they suit us better than any we have been able to buy. We raise honey-getters that are of good color and not cross. Ready about June 5. One dollar each or $10.00 per dozen.
The Scott Apiaries,
La Grange, Ind.

SEASONABLY reared, high class Italian queens at popular prices. Write for circular.
R. V. Stearns, Brady, Texas.

SIMMONS QUEENS—Golden and three-band, ready now. One, $1.25; six, $7.00; twelve, $13.00. Two-frame nucleus, $4.50; three-frame, $6.00.
Fairmount Apiary, Livingston, N. Y.

Crop and Market Report

Compiled by M. G. Dadant.

For our May issue of the American Bee Journal, we asked reporters to answer the three following questions:

1. Any honey left?
2. How have bees come through the winter?
3. Crop conditions?

CROP UNSOLD

There is undoubtedly going to be more of the crop unsold this year than last year, and not only in the hands of the distributors of honey, but also in the hands of many of the larger producers, as well as a few of the smaller ones.

In the northeastern part of the country, the white honey crop is very well cleaned up, but in New York and Pennsylvania there is probably 20 per cent of the buckwheat honey, both comb and extracted, still on hand unsold. It will, of course, move slowly from now on and undoubtedly some of the honey will carry over into the new crop, besides having an effect upon the market prices.

In the north central states, conditions are somewhat similar. The smaller producers are mostly sold out, but there are individual producers in practically every state who have as high as 25 per cent of their crop, and in one or two instances 50 per cent of the crop, left unsold.

However, this statement should not apply to most of the producers. A large proportion of the producers are sold out, but there are still a number who are not. In addition to this, undoubtedly there is a great deal more honey left in the hands of jobbers and commission men than there was a year ago, and a report from one commission house in Chicago states that honey is a drug on the market and that their warehouses are not being readily emptied of what they have on hand.

In the southeastern states, as well as in Texas, Arizona and New Mexico, practically all of the 1925 crop has moved. In fact, possibly more of a proportion than was true a year ago. In the southeastern states, at least, this is due largely to a great influx of population through the big boom in Florida and other gulf coast states. This population has been glad to take up the honey of these states and it has sold without difficulty.

There is quite a large amount of honey left unsold in the intermountain territory, although the plain states seem to be very well cleaned up. As in the other sections, it is in the hands usually of the large producers. One Montana producer reports two carloads at least unsold, and others report the following: Three carloads in Idaho, three carloads in Washington, five carloads in Utah, two carloads in Colorado, three carloads of intermountain honey in California, two carloads of intermountain honey in Iowa.

This is, of course, in addition to a large number of large lots, which are yet to be disposed of, in the hands of producers. In all, the situation, while not serious, has had a depressing effect on the honey prices and in many instances they have dropped from one to two cents per pound so as to move this honey.

If the honey can be disposed of ahead of the new crop yet, it may not affect honey prices next fall, and moreover, the final results of 1926 honey crop will also have its effect upon the fall prices. It is undoubtedly true, however, that the carry over, together with the apparent slump in prices, is going to have a not too good effect upon the start-off prices next fall. At least it would seem so from previous experience.

CONDITION OF BEES

Sixty days ago, when we had a lull in the cold weather, allowing the bees to get a day or two of flight throughout most of the central west and southern states, reports were that bees were coming through in excellent condition. The prolonged cold spell, however, has not had a good effect on bees, and reports are now not nearly as good as they were two months ago.

Cellar-wintered bees in the northern states are still expected to come through in fairly good shape because of the prolonged winter without a long warm spell. Outdoors-wintered bees, however, have, in many cases, had considerable loss, and there is, moreover, going to be a large amount of starvation unless it is carefully watched by the beekeepers. Probably a large proportion of our readers will have no difficulty with losses on this score, but undoubtedly many of the smaller beekeepers who are unacquainted with the situation will lose a good proportion of their bees through starvation, owing to the prolonged cold weather and the absence of any early bloom so far.

There is not much doubt but that losses will be considerably heavier than they were a year ago. This applies generally to the country. The southeastern states and Texas, which reported earlier bees in good condition, are now reporting considerable dwindling through cooler weather and starvation. Of course, by the time this is in the hands of our readers, probably the "worm will have turned" and bees will again be "booming."

HONEY PLANT PROSPECTS

There is this year very spotted prospects throughout the north half of the United States, with reference to the clovers. In many sections white clover was badly hurt by drouth last summer and fall and by dry weather throughout the early part of the winter. In other sections fall rains put clovers in good shape and the recent snows have almost insured a good crop from white clover, unless we have bad weather during clover bloom.

Some of the states which appear to be fairly well off as to clovers are the New England States, New York, Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, Minnesota, North Dakota, Missouri and Kansas.

Some of them in which clover seems to be considerably hurt are Illinois, Iowa, South Dakota and Nebraska.

All in all, we do not believe that conditions are as propitious for a white clover flow as they were a year ago. Possibly one exception to this is the states of Missouri and Kansas, which appear to be in much better condition than in 1925.

In the intermountain states conditions appear to be excellent, owing to heavy snows. Colorado, which has more or less suffered from drouth the past two years, has had much snow this year, except in the southeastern portion, which is yet dry.

The same is true with reference to Utah, Nevada and Idaho, in which conditions are at least normal or better. Washington and Oregon report very good wintering and excellent prospects.

California is apparently going to come back in the heavy honey-producing states this year.

Recent rains of from 6 to 10 inches in the southern half of California have almost assured a crop there, although conditions previous to that were somewhat questionable.

Undoubtedly the orange crop has been considerably hurt by late cool weather and a consequent smallness of honey-producing colonies as a result. For the later crops, however, California is apparently going to have to be counted in on the ultimate crop.

PACKAGES WITH QUEENS INTRODUCED will save time and loss in both bees and queens. Our queens are of the best Italian stock and are introduced and ready for business upon arrival. Also queens alone. We never have had any disease in our yards. State inspected. Satisfaction guaranteed.
A. O. Smith, Mt. Vernon, Ind.

FOR MAY DELIVERY—Our nice, light, three-banded bees and queens, with our clean health certificate. 1-2 frames nuclei with select untested queen, $3.50; 3 frames nuclei with the same queen, $4.00. The frames are the standard Hoffman.
The Liberty Apiary, C. A. Mayeux, Prop., Hamburg, La.

BEES—Free delivery and prompt service. See advertisement on page 243 for prices, etc. The Citronelle Apiaries, Citronelle, Ala.

PACKAGE BEES—See larger ad on page 258 or write for prices. John A. Williams, Box 178, Oakdale, La.

MY famous three-banded, leather-colored Italian queens, April 20 and May, $1.25, six for $7.00; after June 1, $1.00 each, six for $5.00. J. W. Romberger,
3113 Locust St., St. Joseph, Mo.

TWO-POUND PACKAGE Italian bees $3.00. Italian queens, $1.00 each; $11.00 per dozen. The F. M. Russell Co.,
Roxbury, Ohio.

GOLDEN QUEENS, producing bees yellow to tip and improvement over last year's raising, untested, $1.00; 6 for $5.00. Tested, $2.00. Satisfaction guaranteed. Print your address.
H. G. Karns, Victoria, Va.

PURE ITALIAN QUEENS—Untested $1.00; tested, $1.50; 2-lb. package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle,
924 Pleasant St., Reynoldsville, Pa.

HOLLOPETER'S "Bred for Business" untested Italian queens, light three-banded stock, ready June 1; $1.00 each. Write for circular. J. B. Hollopeter, Rockton, Pa. Commercial queen breeder continuous from 1911.

WRITE for special prices on 2-lb. package bees and queens for June delivery.
Benson Bee Line Apiary, Galena, Ill.

ITALIANS—Strong, hardy, vigorous. None better, few equal. Untested, $1.00; tested, $1.25. No disease.
Chas. W. Quinn, La Belle, Fla.

GOLDEN Italian Queens and Nuclei for 1926—The big, bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6 for $5.00; 12 for $10.00; $75.00 per hundred. Tested, $2.00 each. Two-frame nuclei with queen, $4.50 each; 10 or more, $4.00 each. Safe arrival guaranteed.
E. F. Day, Honoraville, Ala.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 22 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with queens. Prices: Untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $10.00.
Emil W. Gutekunst,
Colden, N. Y.

LATHAM'S "She-Suits-Me" untested 3-banders, $2.00 per queen from May 15 to June 5. After June 5, $1.00 each. Packages and nuclei. Introduction insured. Send for circular.
Allen Latham, Norwichtown, Conn.

ATTENTION, NORTHERN HONEY PRODUCER—St. Romain Quality Bees ready for 1926 season. I am in position to furnish several carloads of nuclei and pound packages at a very reasonable price. Shipping season starts April 1, 1926, and all bees are absolutely free from disease. I furnish health certificate with each shipment, also guarantee safe arrival. All bees shipped on comb of emerging brood and honey for feed in transit, also combless packages, if customer desires. Prices as follows: 1 2-lb. package with queen, $3.00; 1 3-lb. package with queen, $4.00; 1 4-lb. package with queen, $5.00. Large orders will be given special attention. Address
John St. Romain, Marksville, La.

FOR SALE—Twenty-five 2-pound packages with purely mated queens. One or all at $4.00 per package. Absolute satisfaction guaranteed. Valley Bee and Honey Co.
Box 703, Weslaco, Texas.

BIGGEST and best package now offered: Two frames with brood and honey, two pounds bees and one untested queen, $5.00. Twenty per cent books order for May delivery. All bees shipped with health certificate attached. L. J. Bond,
Big Bend, La.

GOLDEN Italian queens, untested, 1 to 5, $1.00 each; 6 to 11, 90 cents each; 12 or more, 80 cents each. Tested, $1.50. Select tested, $2.50. No disease, safe arrival. Twenty years a breeder. Satisfaction guaranteed.
D. T. Gaster, R 2, Randleman, N. C.

FOR SALE—Italian queens. Untested, 1 to 10, $1.00 each; 11 to 25, 85c each; more than 25, 75c each. Tested, $1.50 each. Satisfaction guaranteed. Ready to ship June 1 to June 10. R. B. Grout, Jamaica, Vt.

GOLDEN Italian queens, untested, $1.00 each; 6 for $5.40; 12 for $9.60. Tested, $1.50. Select tested, $2.50. Three-banded Italian queens, 1 for $1.10; 6 for $6.00; 12 for $10.80. No disease, safe arrival and satisfaction guaranteed.
Sam Hinshaw, Randleman, N. C.

BEES, BEES, BEES—I have the bees and equipment, backed by 15 years of beekeeping experience and selective breeding to supply your wants with three-banded Italians. Begin shipping April 10. Two-pound packages with queen, $4.00 each; 6, $3.75 each; 12 or more, $3.50 each. Select untested queen, $1.00 each; 12, $10.00. Satisfaction guaranteed.
P. M. Williams, Ft. Deposit, Ala.

GRAY CAUCASIANS, GRAY CARNIOLANS—Purity of race guaranteed. Fifteen years of real breeding and expert selection are behind them. Strong, long-lived, and as producers of commercial honey they have no superiors and few equals. Try them. Untested, $1.50; tested, $2.50; select tested, $3.00 each. Ten per cent off on lots of one dozen. Rates on 100 or more. No disease. Chas. W. Quinn, La Belle, Fla.

QUEEN BEES—$1.00 each or $10.00 per dozen. A few pound bees later in the season, $2.00 per pound.
Graydon Bros., R. 4, Greenville, Ala.

TRY PETERMAN'S QUEENS—Bred from select breeders, raised in standard frame, strong, nuclei well laid up before caging and last and most important, I select only the largest, thrifty layers to sell, killing all others. From experience I know this pays. Am building a business on a square deal basis. Prices: 1, $1.25; 6, $7.00; 12, $13.00; 25, at $1.00 each; 100, 90c each.
H. Peterman, Lathrop, Calif.

GOLDEN THREE-BANDED and Carniolan queens. Tested, $1.00; untested, 75c each. Bees in 1-pound package, $1.50; 2 pounds, $2.50; 3 pounds, $3.25. Safe delivery guaranteed. C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

SALIDA APIARIES for early Italian queens and package bees. Write for prices and order early. Salida Apiaries,
Salida, Stanislaus Co., Calif.

BOOKING ORDERS FOR 1926—Two frames well covered, two additional pounds, queen introduced and laying enroute to you, all for $5.00. Best package and best price in the South. Young Italian queen and bees and Hoffman frames, with health certificate attached. One-fifth down books order for May delivery. Send for December copy of Beekeepers' Item giving co-operative plan of certified advertising of members of Louisiana State Beekeepers' Association.
Jes Dalton, Bordelonville, La.

TEN YEARS of experience in breeding queens of quality Goldens, also gray Caucasians. Golden queens: one, $1.25; dozen, $11.50. Gray Caucasians, one, $1.50; dozen, $15.00. Pure mating. Safe arrival guaranteed in United States and Canada.
Tillery Bros., Rt. 5, Greenville, Ala.

BRIGHT three-band Italian queens with special introducing cage. See display ad for prices. J. F. Diemer,
Route No. 3, Liberty, Mo.

THREE-BANDED Italian queens. Package bees. Untested queens, 1, $1.00; 6, $5.00; 12, $9.50. 100, $75.00. Tested queens, $1.50 each. Write for price list on package bees. Safe arrival, satisfaction guaranteed.
Taylor Apiaries, Lock Box, Luverne, Ala.

BRIGHT ITALIAN QUEENS—One, $1.00; 6 for $5.00 or 12 for $10.00. Write for prices on large orders or package bees.
P. B. Skinner, Greenville, Ala.

FOR SALE—Italian bees and queens, 2-lb. packages of bees with queens, $3.50 each; 1-lb. package with queens, $2.50. Queens bred with the greatest of care.
O. P. Hendrix, West Point, Miss.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1st, $1.00. Tested, $2.00. A. W. Yates
15 Chapman St., Hartford, Conn.

SALIDA APIARIES are now booking orders for early spring delivery of our high-class Italian queens and bees. We use the best breeders obtainable and ship only the best thrifty queens. Prompt service, safe arrival in U. S. and Canada, and we guarantee to treat you square. Untested queens: 1, $1.25; 6, $7.00; 12, $13.00; 25, $1.00 each, and 100 at 90c each.
Salida Apiaries, T. L. Nicolaysen, Prop.,
Salida, Stanislaus Co., Calif.

FOR SALE—Italian queens ready May 15. One queen, $1.00; 6 queens, $5.50; 12 queens, $10.00. W. W. Talley,
R. 4, Greenville, Ala.

FOR SALE

5 TO 150 STRONG COLONIES Italian bees. Best strains, lots of brood and stores; standard ten-frame equipment, good condition, from yards free of disease; inspector's certificate if desired. Am overstocked, so here is your chance to get something good at a cheap price. Lloyd W. Smith, Madison, N. J., or 56 William Street, New York City.

WANTED—To sell 18 colonies of bees complete with extra, deep or shallow, supers for surplus honey, extracting and comb. Dadant's wired foundation throughout. Less than 10 per cent drone comb. For sale by
W. S. Franseen, Woodhull, Ill.

ABOUT 150 supers for 4x5 sections, complete with inside furniture; like new; $1.00 each. Merton Church,
Highland Park, Ill.

IF you want to buy the best located apiary in Iowa, mine is for sale. Reference: F. B. Paddock, Iowa State College, Ames, Iowa. E. E. Townsend,
Fort Dodge, Iowa.
Security Trust and Savings Bank, Fort Dodge, Iowa.

FOR SALE—200 ten-frame deep extracting supers, drawn combs, 125 queen excluders, 100 empty hives with drawn combs, eight and ten frame, one eight-frame power extractor. I am running for comb honey. Could use 100 ten-frame comb honey supers in deal.
Chester Keister, Orangeville, Ill.

CHICK PRICES SLASHED—All kinds. Remarkable guarantee. Quick delivery. Catalog free.
Comfort Hatchery, Pleasanthill, Mo.

FOR SALE—One of the best coon dogs in the world; $50.00, or will trade for new bee supplies. Henry Cable,
Brookville, Pa., Rt. No. 1.

HOUSE and 200-hive outfit near Tomah. Land and bees if desired. Excellent location. Will sell cheap. Write for particulars. Lynn Reynolds, Tomah, Wis.

FOR SALE—Golden Italian queens. One untested queen, $1.00, ready for mailing about May 20; one tested queen, $2.00, ready June 20. Satisfaction guaranteed. When orders cannot be filled in six days, money returned, unless otherwise ordered.
J. F. Michael, R. No. 1,
Winchester, Ind.

FOR SALE—Standard extracting outfit, including supers of combs, queen excluders, extractor and tanks. All goods in fine condition; no disease. Write for prices and information. Ten-frame hive, used.
Fred H. Drury, Unionville, Mo.

FOR DISPOSAL—Location of 3,000 acres sweet clover and 100 strong colonies bees and complete equipment for extracting. Address Beekeeper,
Care of The American Bee Journal.

REXFORD'S Push-in Comb Introducing Cage, automatic, 35c; three for $1.00. If you like so to do, try the rest, then send to Winsted and try the best.
O. S. Rexford, Winsted, Conn.

FOR SALE—20 colonies of bees, free from disease; 86 supers, 1 extractor, 1 honey tank, 1 capping melter.
H. Iglemose, Wheaton, Ill.

BEES FOR SALE—Eighty colonies, eight- and ten-frame hives, two hundred comb honey supers. No disease, fine location. Other business prompts selling. Rate $6.00 per hive takes outfit. For particulars write
R. F. Thornberry, Cairo, Ill.

WILL EXCHANGE mountain ranch for bees, business, or what? Address
Edw. D. Harris, Canon City, Colo.

FOR SALE—Cowan honey extractor, No. 17, and Dadant uncapping can. They are in perfect condition.
G. A. C. Clarke, LeMars, Iowa.

WE have just secured from France a quantity of "sanfoin" seed which we offer to subscribers interested in trying this valuable honey plant. Prices are: Per pound, 30c; 5 pounds, $1.25. Parcel post extra.
American Bee Journal, Hamilton, Ill.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn, odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

FOR SALE—Hubam sweet clover seed, recleaned and scarified. Write for prices.
Dadant & Sons, Hamilton, Ill.

HONEY AND BEESWAX

FOR SALE—Good quality of clover honey.
Lewis O. Klaty, Carsonville, Mich.

FOR SALE—White clover honey in 60-lb. cans. None finer. J. F. Moore,
Tiffin, Ohio.

TO EXCHANGE—A visible No. 9 Oliver typewriter for 300 pounds of white extracted honey. H. G. Quirin,
Bellevue, Ohio.

WILL TRADE package bees for white honey, or what?
Van's Honey Farms, Hebron, Ind.

FOR SALE—500 cases white clover comb honey. Charles Guhl, R. 7, Napoleon, O.

SUBMIT sample and price on extracted honey in barrels, kegs, or tin.
J. Gakler, R. 1, Memphis, Tenn.

FOR SALE—Choice fancy 1925 crop clover extracted honey in new 60-lb. cans, 10c. Ton lots at 9½c. Sample 10c.
Rt. 1, Edw. A. Winkler, Joliet, Ill.

WANTED—Car of sweet clover honey.
A. V. Small, Root Bee Supplies,
Augusta, Kans.

NORTHERN MICHIGAN white honey in new 60-lb. cans. Write for prices.
L. C. House, Stambaugh, Mich.

FINE quality white clover comb, graded fair; priced right; carefully packed.
W. L. Ritter, Genoa, Ill.

FOR SALE—Fancy white clover comb honey, 32-section, glass-front cases, $6.25. No. 1 white, $5.25 per case. Also white extracted in packages to suit.
Jay Cowing, Jenison, Mich.

COMB HONEY—Vermont clover of the finest quality in any quantity.
J. E. Crane & Son, Middlebury, Vt.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau,
Moorhead, Minn.

FOR SALE—Comb honey at reduced prices. Write, stating your wants.
H. G. Quirin, Bellevue, Ohio.

CHOICE lots of clover honey still in hands of producers. Excellent quality. Few bargain lots. The A. I. Root Company of Iowa, Council Bluffs, Iowa.

FOR SALE—White and water white sweet clover honey; put up in 5-gallon cans. Strictly first-class in every way. Write for prices, stating quantity wanted.
Dadant & Sons, Hamilton, Ill.

CLOVER HONEY in new 60-pound cans.
Wm. Oliver, Wayne, Neb.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Ill.

FOR SALE—Comb, extracted and chunk honey. Prices on request. Samples 15c.
F. W. Summerfield, Waterville, Ohio.

FOR SALE—Several very choice lots comb honey at $4.50 to $5.25 per case. Also fine lots sweet clover, white clover, buckwheat and light amber extracted in 60-lb. cans. Beekeepers who need more honey for their trade and solicitors should write us.
A. I. Root Co., of Chicago,
230 W. Huron St., Chicago, Ill.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station as you may desire.
Dadant & Sons, Hamilton, Ill.

HONEY FOR SALE in 60-lb. tins. Clover, crystallized at 13c per pound; clover liquid at 14c per pound.
Hoffman & Hauck, Inc., Ozone Park, N. Y.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co.,
217 Broadway, New York.

SUPPLIES

LEWIS Beeware and Dadant's foundation. Satisfaction guaranteed. Phone Red 807. Wire, write, or drive in. We like rush orders. Ohmert & Son, Dubuque, Iowa.

BEEKEEPERS, send me your orders for Leahy bee supplies. Satisfaction guaranteed. James Metts,
201 Polk Ave., Ridgway, Pa.

ROBINSON'S COMB FOUNDATION will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases.
C. H. W. Weber & Co., Cincinnati, O.

BEES and bee supplies, superior quality, lowest prices. No disease.
R. C. Schurtz, Stirling, Alta, Canada.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list.
The Colorado
Honey Producers' Association,
Denver, Colorado.

MISCELLANEOUS

HONEY LABELS—Attractive and original. Made especially to suit your business. Lowest prices. Catalog free. Liberty Company, Station D, Box 4199, Cleveland, Ohio.

EVERYTHING in labels and printing for beekeepers. Send for samples. Lowest prices. Sindelar Printing Co.,
5733 Broadway, Cleveland, Ohio.

IF any beekeeper knows present address of J. P. Hill, ex-soldier and beeman, please write Box B, care American Bee Journal, Hamilton, Ill.

OUR BUSINESS is Bees. Read our ad on page 247.
Frank & St. John, Ripon, Calif, Rt. 1.

WHITE CLOVER, blended with fall flowers, or Buckwheat, either grade $10.00 per two 60-pound tins.
J. G. Burtis, Marietta, N. Y.

WESTERN HONEY BEE, 428 S. Hewitt St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. $1.00 per year. Send for sample copy.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for $1.00.
Allen Latham, Norwichtown, Conn.

WANTED

WANTED—Experienced man to extract crop, commencing July. Have modern outfit. E. Sires, Stanfield, Oregon.

WANTED—Early in May, man of practical experience to manage about 250 colonies pure Italians, run mostly for extracted honey. Yards about 25 miles from New York. Wages $50 per month and board and percentage of profits. Apply, giving age, nationality, experience, etc., to Lloyd W. Smith, Madison, N. J., or 56 William Street, New York City.

STEADY position for two men. State age, experience and wages expected. Extracted honey.
B. F. Smith, Jr. Fromberg, Mont.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering.
Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

Letters From Customers

February 25, 1926

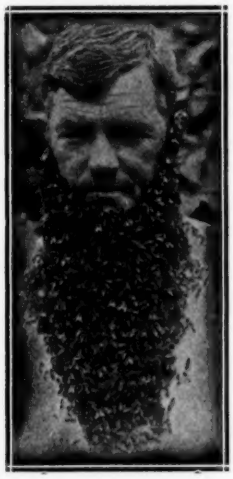
Dear Jake:

I see by the paper you have hired out to them newspaper fellows again and that you start in on the first of the month. I am glad to hear it. I always read your stuff and I say you are the the best B. B. expert south of Brownsville. I am sending you a mess of spring potrie I raised myself. You can use it if you want to. I guess it will take you some time to get limbered up. So here goes:

There was a old farmer and he loved
the bees,
And he figured each be his friend.
He'd go out and sit on the hive all
day,
But he got stung in the end.

Hoping you are the same,
I. B. DURN.

(Clipping from "Dallas Journal.")
Sent in by S. H. Sabine.



A May swarm of bees is worth hay,
If you tend to them right they will pay;
But if they're neglected,
No pay is expected,
So care for them right and be gay.

QUEEN WORTH FIVE TONS ALFALFA

The sages set the price of a May swarm at a ton of hay. Our bees do not swarm much, and a colony that does not swarm is worth five times one that does. Our bees are great honey getters, are gentle—but this space costs too much to tell it all here, so write for our new catalog and get the whole story. We are shipping queens now.

Prices before July 1

1 to 4 inclusive	$2.00
5 to 9 inclusive	1.95
10 or more	1.90

Prices after July 1

1 to 4 inclusive	$1.50
5 to 9 inclusive	1.45
10 or more	1.40

Breeders, service guaranteed for the season, $10.00 each

ADDRESS

JAY SMITH, Vincennes, Ind.
R 3

RUDDY'S

FOR

Beekeeper's Supplies

Canadian headquarters for all kinds of standard beekeeping appliances

Langstroth and Jumbo Hives and fixtures, Hand and Power Honey Extractors, Steam-heated Honey Knives, Cappings Melters, Wax Extractors, etc.

Exclusive Canadian manufacturers of **"AIRCO"** new process single-ply and three-ply comb foundation.

Customer's Wax Made Up

Ruddy Manufacturing Company, Ltd.
BRANTFORD, ONTARIO

READ THIS

And bear in mind that not one of our customers has written that he was dissatisfied with our Queens.

"The 50 Queens bought of you last year did fine and were as good a bunch of Queens as we have ever bought at any price."—Montana.

"I am writing to thank you for the 25 Queens I got from you last spring, and want to say they were the best Queens I ever received from the South. If you will give me the same good service this spring I want you to quote me prices on," etc.—Iowa.

Names on request

You may expect the same Standard of Quality and Service
Three-Banded Italian Queens—Prices as follows:

1 to 11	$1.00 each
12 to 24	.90 each
25 to 49	.80 each
50 to 99	.75 each
100 or more	.70 each

Safe Arrival and Satisfaction Guaranteed

JNO. C. HOGG, Ramer, Alabama

Olive Trees (Oleacea)

By Ph. J. Baldensperger.

The olive tree, which was imported from western Asia to the south of Europe before the Christian Era, is now a citizen with us, and Linneus gave it the name of "Olea Europaea" or European Olive tree, though it ought to be called Asiatic Olive tree. At all events Asia Minor and Pheonecia, and Palestine cultivated the tree in very early days. The dove sent out of Noah's ark to find dry land came back with the olive branch of peace in its beak and the Jews remind us of the olive tree often mentioned in the Bible.

In the south of France the olive tree flowers early in June, but begins almost a month earlier in Palestine. When the greenish white petals of the small flowers, which are not more than one-sixth of an inch in diameter, fall to the ground, it looks like a slight fall of snow, covering the earth around the trees. On account of their small size, just as with the oak flowers and the **Alyssum maritimum** bushes growing about the Alps, they are not as a rule visited by bees. Once in a while I come across an olive tree or an oak tree giving nectar. As it is so rare I have not remarked whether the same tree gives nectar every year.

As a rule, big flowers are visited by long-tongued moths while the middle-sized flowers are left to the hive bees and bumblebees, the tiny ones are left to undersized insects. The flowers of Olea fragrans are employed in China to give odor and flavor to a particular kind of tea.

$12,000.00 Paid to Three Canadian Beekeepers

Forty tons of Southern Alberta honey, the nectar of the unsurpassable clover and alfalfa fields of the Lethbridge district, have been handled by one wholesale firm here this fall, says the Lethbridge Herald. Campbell, Wilson & Horne paid out $12,000.00 to three honey producers of this district, the Reidel, Rose and Kerr apiaries. This company is now distributing the home product, and finds the demand keener than ever for honey. Two of the honey producers, Mr. Rose and Mr. Kerr, handle bees purely as a sideline, but the returns have been so gratifying that their apiaries have become one of their best sources of revenue. The Reidel apiaries will operate on a larger scale than ever this year.—Irma, Alberta, Times, Feb. 6, '26.

Prices are Important

But remember that quality counts in the long run.

When you buy FOREHAND'S THREE-BANDS you can depend upon a THRIFTY strain of bees that is **surpassed by none but superior to many.**

A third of a century of service to America's greatest honey producers assures you of young, THRIFTY bees that are guaranteed to please.

Prices quoted are for delivery by express F. O. B. our station and **include untested queens:**

Two-pound Packages

1 to 9	$3.95 each
10 to 24	3.85 each
25 to 49	3.70 each
50 up	3.60 each

Three-pound Packages

1 to 9	$4.95 each
10 to 24	4.85 each
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Safe delivery guaranteed.

Write for folder giving prices of queens, etc.

REMEMBER—Thrifty Bees Always Please

W. J. FOREHAND & SONS
FORT DEPOSIT, ALA.

CARNIOLANS

build up rapidly during the changing weather of the spring months. Good wintering and rapid development of brood during the spring months is necessary to secure a crop of honey in our northern states. Besides, Carniolans are very gentle, very prolific at all times and most excellent workers. 1925 average over 150 lbs. extracted per colony. Ask for my free paper, "MERITS OF THE CARNIOLAN BEE."

1 Untested	$1.50
6 Untested	8.50
Tested, each	2.50

Twenty years' experience with Carniolans. I also breed Jan Strgar and M. Ambrozic imported strains. Queens ready last of the month. Safe arrival in United States and satisfaction guaranteed.

ALBERT G. HANN,
Glen Gardner, New Jersey

PERSONAL QUEENS CAREFULLY RAISED

Are Always Better

Good untested, one grade,	$1.00 each
50 untested	$45.00
100 untested	85.00

NOW READY

D. W. HOWELL, Shellman, Ga.

LEININGER'S STRAIN OF ITALIANS

BRED FOR BUSINESS

Beginning June 1st, we will sell queens from this famous strain at the following prices: 1 to 5, $1.00 each; 6, $5.50; 12, $10.50; 100, $85.00. Tested, $1.50. Breeders, $10.00 each.

FRED LEININGER & SON,
Delphos, Ohio.

ARE YOU ASKING—

HOW SHALL I SELL MY HONEY?

The answer is easy! Beekeepers are fast learning that the best market is the home market. Honey packed in attractive containers sells best.

Build up your local market. Decorate your grocers' shelves with rows of your choice honey neatly marked with your attractive label

If you do not find a stock label in our catalog (it will be sent upon request) which meets your needs, send us your ideas and we will put them in color.

We also furnish stationery, business cards, selling helps, show cards, in fact **all the printing need of the beekeeper.**

AMERICAN BEE JOURAL, HAMILTON, ILLINOIS

A Customer Talks:

"Last year we handled two lines of cans and pails, yours and those of another manufacturer. We had a lot of trouble with the pails we had been using, because of the ears pulling off. But, we are happy to tell you, we did not have a single complaint on yours.

"Your service was wonderful, indeed, and we hope that we may have the pleasure of turning you our business as long as we are in business."

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HONEY

Prices for May delivery as follows:

1 choice untested Italian queen	$ 1.00
6 choice untested Italian queens	5.40
12 choice untested Italian queens	10.20
1 choice tested Italian queen	1.75
6 choice tested Italian queens	9.00

All queens sent from Sumterville, Ala.

Address

DAVID RUNNING, Filion, Mich. or Sumterville, Ala.

Burr Combs

Bee Notes From the Year 2025

By Heres Hopin.

I had just come down from a meeting at the Auditorium in Chicago when Calvin Stuart glided up to the landing platform back of my house. He must have seen my lights overhead as I came by his place over Airway Thirteen Beacon. His home is right near there. Since the adoption by our association of a standard of four lights, alternate blue and red, at the side of the aileron on our single passenger planes, it is easy for beekeepers to recognize each other from below. There are similar markings on the white metal in daylight.

Cal and I went in. We like to mix back and forth just as much as beekeepers used to do in the earlier days of the industry. This has always been one of the most delightful things about bees. They are a subject of ever present and intense interest, even though we have made tremendous strides in our knowledge of them in the past hundred years.

Cal had a book with him, published in 1924, just about 100 years ago, with pictures of the so-called Italian bee. At that time, as our readers know, references were frequent, both in the current bee magazines and the books of authority on the subject, about different races of bees, but it has always seemed peculiar to me that there was so little attention paid for such a long time to the latent possibilities of any race other than the Italian. For nearly seventy-five years, the Italian bee was the predominant one among honey producers. Here and there a few were experimenting with other bees which gave promise of usefulness, yet it was not until Glenn Hammond discovered a successful method of artificially fertilizing queens, at the National Research University, that much progress was made with bees.

I took down the 2024 edition of "The Honeybee" and opened to the frontispiece, where there is a most beautiful color reproduction of our present standard race, Apis supremis. Its greatly increased size and remarkably fine coloring, compared to the previous Italian and Causasian, is indeed an accomplishment of which we may well be proud.

That particular evening, I was apt to reminisce along this line, since I had just returned from the central Montana yards, coming back by Airway Thirty-six, to make the Chicago meeting before returning home. There was considerable past history in that meeting, although it was called ostensibly for business. These meetings are a nuisance, and since it is now possible to transact business privately over the radio they will soon be a thing of the past.

At those northern yards, I have bees which are part of an experiment I am making in increased flight vigor. It promises well. This will provoke curiosity among my readers, but for fear of being deemed foolish I prefer to keep the details to myself. There are so many experiments now and so many rapid improvements. The novice can experiment with any factor with safety since the final successful establishment of racial immunity to bee disease. This was a tough problem and took many years to solve, but we are all glad that Francis Barber was so persistent after all others had given it up. He deserves a monument.

Since the modifications in bee behavior, worked out selectively by Richard Miller in 1995, great progress has been made in dual and triple queen systems of colony management. Cal and I exchanged notes on results along this line in our apiaries. I have been using a quadruple queen system, working to establish this particular adaption so my bees will readily permit the presence of all four mothers over the entire season.

I have been able to exchange four-year-old queens for queens of specially selected breedings without any particular disturbance to the remaining queens in the colony. I weighed a colony the other day, shaking all the bees from the combs, and found it weighed just a little short of fifty pounds, about 250,000 bees. I wonder what impression this colony would have made on some of our earlier bee masters!

Although the quadruple system is a new thing, I have already found it necessary to modify the size of my hives considerably, even though our present brood chambers are 100 per cent greater than the earlier sizes. I find that two of them together do not provide sufficient room to keep such colonies from hanging out at the entrance.

At one time this would have been a signal for swarming, but since Swanson's successful separation of the swarming factor in inheritance a swarm is a rare thing. I believe, in the last twenty years, among eight thousand colonies, I have not had over ten swarms, and each of my location managers has been very careful to keep a close record of this. Swanson's work certainly deserves much praise.

Coming down over the region around the Saint Paul branch of the National Research University, at the University of Minnesota, I noticed a large acreage of the new alfa clover, a cross between alfalfa and white sweet clover, which has been talked of so many years. The university is making rapid progress in distributing this forage plant and it will not be long before it equals our other wonderful honey plant, the Giant Siberian clover.

I have heard such great stories of the yields of the latter, 800 pounds per colony average in northern Manitoba, that I am considering going that far away for a series of about five outyards.

Cal and I have been especially enthusiastic lately over the next international meeting at Tokio, Japan. This is the third time that such a meeting has been held in the Orient, and there is an unusually splendid program. At the last meeting there were 5,000 delegates. We are debating whether to go over on the Trans-Pacific Airline or with a party of fifty California beekeepers who have secured a private plane from one of the shipping companies. The trip can be made in two days, either way.

I was amused the other day at a notice in the "American Bee Journal" of a case of prosecution by the National Board of Directors of the North American Beekeepers' Association. It seems that John Smith, of Common Center, New York, sold 500 pounds of honey on the Albany market at 2 cents below the regularly established price. This is the first offense of this kind in over forty years.

My sympathies are not with Smith and I hope the directors will make this a severe case. Honey has so long been established as a standard quality food that we cannot allow even a single instance of suggested inferiority to go by without punishment. It took too long to get where we are. It would probably amaze our brethren of 100 years ago to know that our present per capita consumption of honey is 25 pounds **per M** with a population of 225,000,000. I see no reason why it should not be 50 pounds. G. H. C.